

A HISTORY
OF
THE AIR MINISTRY

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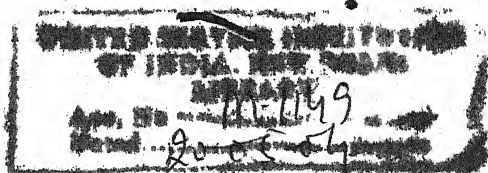
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(ANNUAL) SINCE 1916



LONDON
GEORGE ALLEN & UNWIN LTD
MUSEUM STREET

FIRST PUBLISHED IN 1940

c b

GRE-H

18305



20.7.86

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PRINTED IN GREAT BRITAIN

in 12-Point Fournier Type

BY UNWIN BROTHERS LIMITED
WOKING

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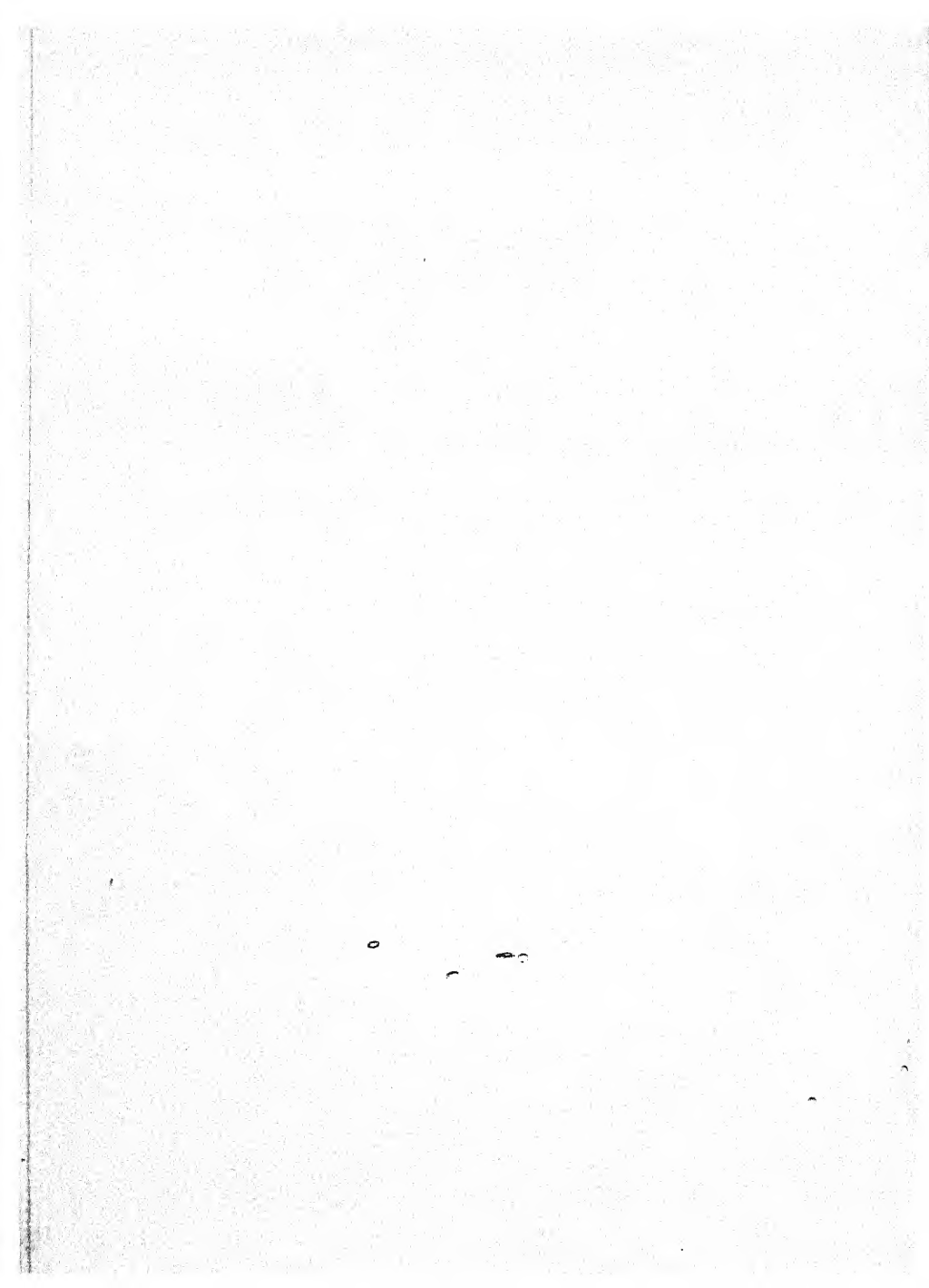
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Author's Preface

The Air Ministry and the Air Force—An Understanding of Air Power—National Moral—Keeping a War Won—Offensive and Defensive Air War—Bombers, Escorts, Interceptors—Special Types of Aeroplanes for the Navy and Army—Seagoing patrols—The Semi-Independence of Civil Aviation—Acknowledgements—What the Book Sets Out to Do

ALTHOUGH the Air Ministry is the youngest of all the Ministries which control the King's Fighting Services, and although it deals with a smaller number of officers and men than do either of the other Ministries, it is no less important than the others. Air Power is at least as important as is Sea Power, and in its immediate effect it is more far-reaching, in that it brings war directly to the inhabitants, and the politicians, of a country. Also in any modern war the air forces of the belligerent countries are the first lines of defence and offence.

Sea Power can only blockade a country or at most bombard coastal towns. Land Power—to use a phrase which brings it into parallel with other forms of fighting power—means a slow and bloody progress through enemy country before any important objective can be reached, assuming that the enemy is a Major Power which can put up a land defence, or even a Minor Power, whose people are intelligent, virile, and united.

A proper understanding of Air Power has only grown up among Service people since the War 1914-18. Here I would like my readers to grasp the idea that although that War is commonly called the Great War by writers of all sorts, it was in fact not a very considerable war judged by the wars of the past. It only lasted for four years and did comparatively little damage.

1-1149 A belt of country a few miles wide from the Belgian Frontier to the Swiss Frontier was devastated by shell fire. A little

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damage of similar nature was done in Northern Greece and Southern Serbia, where in fact there was little property to damage. Also some of the smaller towns in Poland and East Prussia were knocked about a bit. But there was far less wholesale destruction than there was in the Napoleonic Wars in Prussia and Austria. In Arabia (including Sinai, Palestine, Trans-Jordan, and Mesopotamia, now called 'Iraq) practically no damage was done and the indigenous inhabitants made much profit from the high pay which was given for coolie work, or in the form of bribes either for very inefficient military help or to keep out of the row altogether, as for example the huge sums which were paid in solid British gold to Ibn Saud—now King of Southern Arabia from the Persian Gulf to the Red Sea, except for the latest British acquisition, the Hadhramaut.

During 1914-18 the damage done in England by bombing was practically negligible. A few houses were damaged in a few English towns. About 1,500 people altogether were killed. No armament factory of any importance was destroyed.

On the German side the damage done was hardly more considerable, but because Lord Trenchard's Independent Air Force in the East of France in 1918 was within easier reach of the Rhineland industrial cities than were any of our industrial cities of any jumping-off point for German air raids, the production of munitions in Germany was more hindered by the threat of air raids than was our production.

Nevertheless, although so little damage was done by bombs, either from airships or from aeroplanes, the hindrance to production in all the belligerent countries was considerable. I stated in print that if one Zeppelin crossed the coast of England and the air raid warnings were sounded production of munitions all over the Eastern and Southern counties was held up for the night, because even if the factories were not blacked-out completely, most of the workpeople went home or into such air raid shelters as we had in those days, and production ceased. The net result was that the Fighting Forces were deprived of that night's production of material, which was just

Author's Preface

as if the material had been produced and had then been destroyed while in munition dumps in the war area.

The High Authorities did not proceed with the prosecution which they threatened because, fortunately for me, a few days afterwards Mr. Kellaway (since deceased), a Minister of the Crown, made practically the same statement in a speech. And to-day everybody knows the paralysing effect of a general black-out and of air raid warnings, even when there is no air raid.

That point is worth considering because it has a direct bearing on the whole question of air raids and defence against them, and it is a very important factor in considering Air Power as a whole, and, consequently, the work of any Air Ministry.

But, as I have said, the amount of actual damage done in the War 1914-18 was comparatively trivial compared with, say, the Thirty Years War, when the Mark of Brandenburg, which means practically the whole of Central Germany as it is to-day, was so devastated by the warring armies that the people were driven out of the country and the few who remained were reduced to living in the forests and ambushing travellers on the roads, who were few, and carrying them to their lairs in the forest and eating them. Except for the bigger fortified towns there is practically not a house in the Mark of Brandenburg to-day which existed before the Thirty Years War.

Similarly when Timor's Turks invaded Asia Minor and when Kublai Khan's Tartars invaded South-Eastern Europe, they laid waste the country in a way which no Air Power could do.

One must realize these facts before one can consider intelligently the possibilities of Air Power or understand the work which an Air Ministry has to do.

In theory the duties of an Air Force are (A) to attack targets of military importance in an enemy country, and (B) to prevent similar attacks on similar targets in its own country.

There is another school of war-thought which believes that

the purpose of an Air Force is to break the moral of the enemy's population, or in plain language to put the fear of God into the people.

Incidentally may I here remark, to make my meaning clearer in the discussion which follows, that the French word *morale*, so commonly used by writers on military affairs, means what we understand by "morality," whether judged by French or English standards? The word *moral* should be used in discussions of this kind because it means the moral strength or moral effect with which one is concerned.

The misuse of the word *moral* is as common among writers and speakers as is the misuse of "the psychological moment." People commonly imagine that it means a moment of time at which some psychological effect can be produced. In fact it was invented during the Siege of Paris in 1870 when the Prussians were reproached by the English newspapers with their barbarity in bombarding the civil population of the city. Their reply was that they did so to affect the "psychological moment" of the people—the word *moment* was used in the sense in which we talk about a moment of inertia, which is a force-moment round a given point. In other words, it refers to the momentum of the moral of the people.

The psychological moment of the populace of any country is likely to be much more affected by air bombing than by any artillery bombardment. The High Authorities can clear out and send elsewhere the inhabitants of towns and villages which are subject to artillery bombardment on land or from the sea, and the chief effect on the moral of the people is likely to be the creation of intense anger against the enemy people who have driven them from their homes—when once they find themselves again well-housed and fed. But continual air raiding all over a country, not only with high-explosive bombs which will shatter buildings but with incendiary bombs which can set fire to crops and forests, is much more likely to affect the moral of the people and to increase the psychological moment in favour of peace.

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That at any rate is the theory of those who favour unlimited bombing.

The chief argument against such unlimited bombing is that it leads to a dispersal of forces, or a diffusion of energy, when greater effect might be produced by massed attacks on certain targets which would more immediately affect the carrying on of the war.

For example, every country is dependent on its supply of certain materials which are needed for munitions. If any country were to lose its supply of steel it obviously could not make armament or vehicles for mechanical transport. In these days if all the production of light alloys, aluminium and magnesium, were destroyed the position would be nearly as bad, because the supply of aeroplanes and aero-motors would stop. And if all the sources of supply of fuel and oil for internal-combustion motors were destroyed there would be no more aeroplanes or mechanical transport.

The country which could destroy those sources of supply would automatically win the war in the end, because it would have command of the air, and the enemy would soon run short of arms and ammunition and of surface transport other than horse-drawn.

On that argument quite an important school of war-thought believes in concentrating on what are recognized as legitimate war targets. The statement has been made by an important manufacturer in the Midlands that if five streets in his city were blotted out Great Britain could not go on with a war, because the supply of steel of the quality most needed for munitions would cease.

Just such an argument applies to any other nation which makes its own arms. And a nation which does not make its own arms is obviously so small that its defences could be blotted out in a few hours by any great Air Power.

Although a nation's ability to keep a war going may be broken by air attack on its sources of supply, that does not necessarily mean that the nation is conquered or that the war

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has been directly won by Air Power. An obstinate and war-like people may carry on a guerilla warfare for years, as we have seen recently in China, and as we have ourselves found in our wars on the Pathan tribes of the North-West Frontier of India.

Among so-called civilized nations the occupation of the capital city and other chief cities by infantry on their own flat feet and cavalry on hairy horses, or by armoured cars and tanks, is generally recognized as marking the conquest of the country. But a people driven to desperation would still go on fighting. And the only way to subdue them in the end and to keep a war won, would be by co-operation of air and land forces.

Much may be done to hasten such an end if adequate air transport is provided for ground troops. There is interest in noting here that a nation which provided itself with the most efficient and fastest and safest aeroplanes for the transport of troops would find that it had automatically the finest air liners in time of peace. And contrariwise the country which has the biggest fleet of the best air liners will automatically have the best means of transporting its troops in time of war.

Just as we could transport much greater masses of men much faster by commandeering all our great Atlantic liners than we could if we were content to use the old troopships which have taken our troops to India for half a century, so a fleet of big high-speed air liners would carry reinforcements to a critical point much faster than would the ancient lumbering machines which we used to consider as troop-carriers ten or fifteen years ago.

From the foregoing statements, which are not arguments, one sees that, classifying the work broadly, an Air Ministry must deal with offensive and defensive forms of air war. Offensive air war consists primarily in long-range bombing, whether the targets are to be military objectives or the civil population does not affect the types of aeroplanes to be used.

Even if the orders to the bomber crews be strictly to attack only military objectives, there will always be a certain number

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of men who, as soon as they get within reasonable distance of their allotted targets, will pull the plug, drop their bombs, and go home. Some will object to being attacked from above and shot up from below, and will want to get rid of their bombs and get home as soon as they can. Some will argue to themselves that, whatever their orders may be, if they can smash up some of the civil population they will stop those people from working in a munition factory or otherwise helping the war. But there will be some pilots and bombers who if given definite objectives which they know are of definite importance will in spite of all defensive action push through to the target.

Besides bomber aeroplanes there must be defensive types. Until comparatively recently defensive aeroplanes were commonly called interceptors, because their duty was to stay at home and intercept enemy bombers either coming in or on their way out from their targets. But experience of air war in Spain convinced most commanders of Air Forces that although bombers must carry machine-guns, or the heavier type of gun which is called an air cannon, with which to defend themselves, they must also be protected by escorts of fighters, just as bombers were during the War 1914-18.

This policy has produced new types of long-range fighters which can accompany bombers to their targets. During the years 1938-39 a tendency has grown to produce twin-motor fighters for this particular work because they are able to carry bigger loads of ammunition and of fuel than any of the single-motor fighters.

These are the main types of aeroplanes which an Air Ministry has to produce and operate. Besides these all nations have special types of aeroplanes which are commonly called Army Co-operation machines. These are intended to act as scouts for and generally to co-operate with troops on the ground. One of their chief functions is to attack enemy troops on the ground at short range and thus help infantry or cavalry attacks, or operations by mechanical fighting-machines commonly known as tanks. In this country these special units are

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administered by the Air Ministry but are tactically under the command of the officers commanding ground troops.

Our Air Ministry also controls the production and operation of special coastal reconnaissance and defence units. Some people might consider that these coastal defence units should properly be under the control of the Navy, but there is the historical precedent, or parallel, that at one time the coast defence guns and harbour mines were manned by the Navy but were during the past century transferred respectively to the Royal Garrison Artillery and to H.M. Corps of Royal Engineers.

The aircraft which are operated by the Royal Navy were transferred bodily to the Admiralty early in 1939. The types used are limited to those which will go down the lift in a sea-plane carrier or can be carried on the catapults of cruisers or battleships. Before this transfer the aircraft were produced under supervision of the Air Ministry and were supplied to the Navy for the use of the Fleet Air Arm. This rather herma-phrodite branch was manned partly by R.A.F. officers and airmen and partly by Naval officers and ratings, who worked surprisingly well together. The Fleet Air Arm is now wholly controlled by the Navy and is not the affair of this book. The aeroplanes for the Navy are still produced under the supervision of the Air Ministry's Technical branch, and the Air Ministry sells them to the Admiralty.

A curious and interesting point about the Air Ministries of all nations is that they all have a Civil Aviation side which controls all civil flying. Civil Air Transport is operated by private commercial undertakings, or by public corporations in which public money is invested, although the operations are under a Government control which is actually a part of the Air Ministry. But the regulation of Air Transport and private flying, such as the certificates of airworthiness of the aeroplanes, the radio signalling systems, and so forth all come under the Air Ministry.

I hope that this brief dissertation on air war and the functions

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of an Air Ministry will help in the understanding of the purely historical matter which follows.

This is in no sense a history of the Royal Air Force; that would be a book of quite a different kind. But in writing a history of the Air Ministry one must necessarily deal, however sketchily, with the Fighting Force which the Ministry was formed to control.

I wish particularly to acknowledge the help which has been given to me by the Press Section of the Air Ministry and its chief Mr. C. P. Robertson, who have compiled the lists of Members of the Air Council year by year for the twenty-one years of its existence, and the lists of the R.A.F. Commands, which cover twenty years. These lists are historical documents which have not hitherto been published.

The lists of Members of the Air Council show how the organization of the Ministry has changed from time to time, and incidentally illuminate the careers of many eminent personages. The lists of R.A.F. Commands and of the Air Officers (who correspond with Flag Officers in the Navy or General Officers in the Army) who have commanded them, give one an understanding of how the Air Ministry's responsibilities have increased, and like the other lists, shed light on the progress in the Service of the many officers who have borne the burden of building up our Air Force.

[These names do not appear in the Index, for they are in themselves an index to the progress of the R.A.F. since 1918.]

Apart from these official documents I have avoided asking any of my friends in the Service for information, partly so that none but myself may be held responsible for anything that I have said, and partly so that nobody might ask me to say or not to say anything. What appears in this book is all taken from published facts or statements. I have expressed none of my own personal opinions, but I have quoted the published, not the private, opinions of many people. My readers may agree with or disagree from them as they wish. They can neither commend nor blame me for them. I can only

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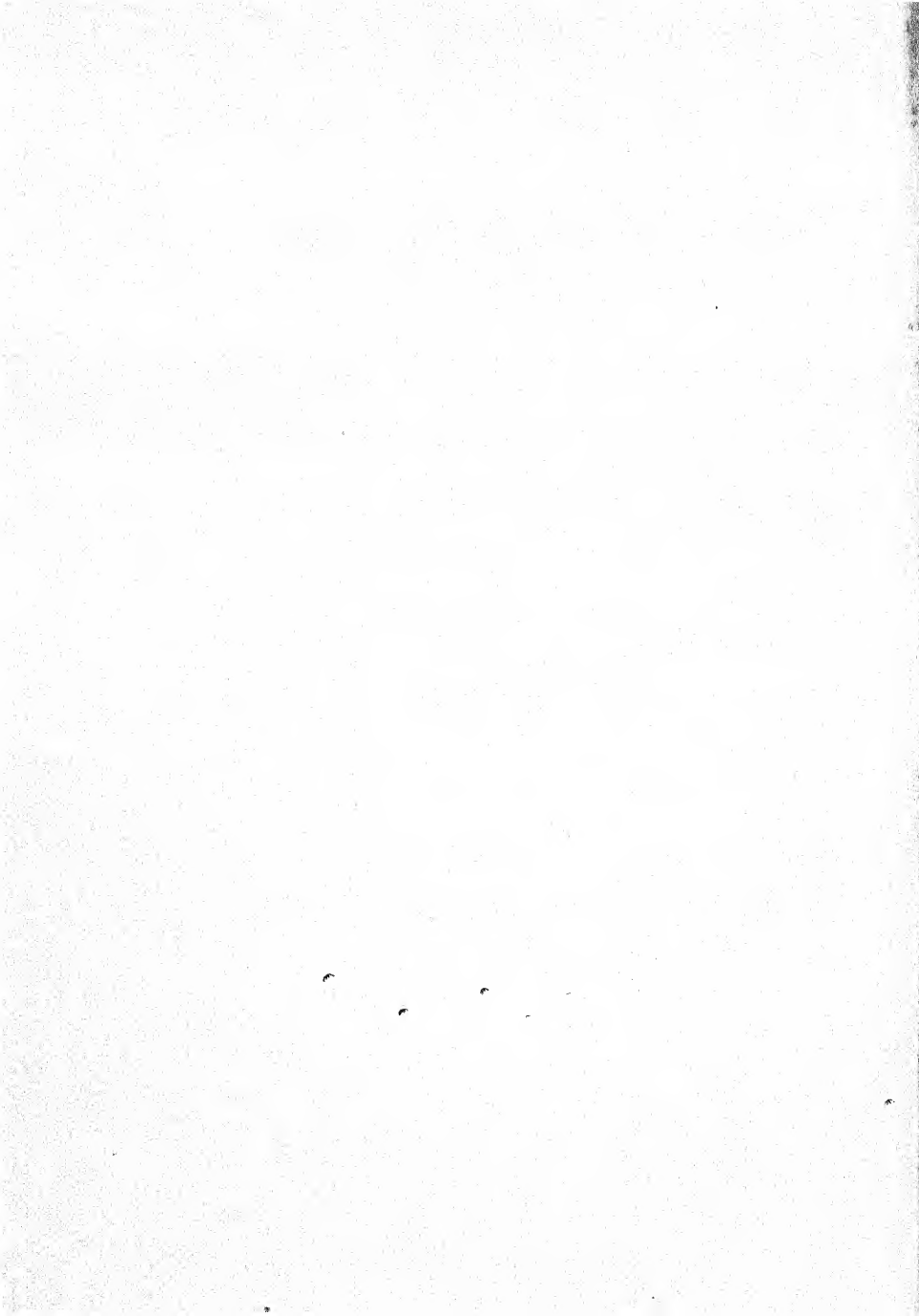
hope that this book may provide a fairly clear and simple history of How and Why the Air Ministry came into being (Part I); How the Air Ministry is Organized (Part II); and What the Air Ministry has done since it was created (Part III).

The titles which appear as headings to Chapters do not generally indicate the contents of the pages which follow. They rather fulfil the function of milestones in the history—or footprints in the sands of time. The matter which is in the chapters appears in condensed form after the headings and again in the index.

C. G. GREY

PART I

*How and Why the Air Ministry
Came into Being*



CHAPTER ONE

The Beginning of Service Aviation

What are "Aircraft"?—Balloons in War—The Coming of Airships—The Sappers' First Aeroplanes—The Army Aircraft Factory at Farnborough—The Air Battalion R.E.—The Formation of the Royal Flying Corps—Lark Hill on Salisbury Plain, and Its Pioneers—The Bristol Company—The Navy's Start in Aviation—Frank McClean—Short Brothers—Eastchurch, Isle of Sheppey—The Central Flying School, Salisbury Plain—Military Aviation at the War Office—The Air Department at the Admiralty—The Military Wing R.F.C. at Lark Hill, Netheravon, Upavon, Montrose and Farnborough—The Military Aeroplane Competition, 1912—The Aircraft Factory's B.E.s., F.E.s., and S.E.s.—Army Policy versus Navy Policy—The Aircraft Trade

IF one is to understand why the Air Ministry exists and the basis on which it was built one must have at any rate a superficial knowledge of Military Aviation before the War. I use the words Military Aviation in the strict sense of Militant as opposed to Civil Aviation, and not in the commonly accepted sense of military or Army aviation as differentiated from Naval aviation. Personally I prefer to use the phrase Service Aviation, or the Flying Services, to differentiate between Military and Civil Aviation.

Furthermore, the word aviation, whether you pronounce it ay-viation or avviation, is a convenient description of air travel in all its ways. Although the word *avis* means a bird the word aviation may be allowed to include air-faring by balloons, and by machines which have rotating vanes or planes as well as such flying machines as have wings which remotely resemble those of birds.

Also the word aircraft should be taken to mean all kinds of vehicles of the air, balloons, gyroplanes, helicopters, autogiros,

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airships, biplanes, monoplanes, landplanes, and seaplanes. And seaplanes should be taken to include aeroplanes on floats, or floatplanes, as well as flying-boats. But, unhappily, certain of the Intelligentsia of the Air Ministry insist on using the word aircraft when they specifically mean aeroplane. It is a bad habit of which members of the Service which depends so much upon exact science would do well to cure themselves, because it indicates a sloppy mental outlook.

Furthermore, such vulgarisms as abbreviating the word aeroplane to 'plane, and aerodrome to 'drome, although common among the lower strata of aeronautical folk should not be tolerated, although the words landplane and seaplane are officially recognized and although the verbs to emplane and to deplane are used as the Air Force equivalent of the Naval verbs to embark and debark.

That being that, we may get down to the early history of British Service Aviation.

The first aircraft which were used in war were the captive balloons used by the French Revolutionary Army at the Battle of Fleurus and at the Siege of Maubeuge. Their adventures and those of their crews would themselves make a humorous little book, and possibly because they were so humorous nobody treated balloons as a serious military vehicle until an attempt was made by the British Army to use them in Lord Napier's war in Abyssinia about 1878.

Free balloons were used to take people and despatches out of besieged Paris in 1870, but that can hardly be considered a military use.

The next attempt by the British Army to use balloons seriously was in the South African War, round about 1900. So far all balloons had been of the ordinary spherical type which, if anchored to earth, sways about and bobs up and down in any kind of wind as does a buoy in a tideway, and as no human stomach was ever discovered which could endure the motion, spherical captive balloons could only be used in practically a flat calm.

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The kite-balloon, with which everybody is so familiar to-day, was first adopted in its most primitive form by the German Army about 1911. They were called *drachensflieger*, or dragon-fliers, from the word *drachen*, a kite.

In spite of its disabilities the spherical balloon still existed in the British Army up to the formation of the Royal Flying Corps in 1912.

The actual beginning of aviation—that is to say, air navigation, as distinct from captive balloons—in the Services was the formation of an Air Department at the Admiralty in 1910, which undertook to build an airship more or less on the lines of that with which Count Zeppelin had already had some success on Lake Constance—or, more correctly, the Bodensee. The machine was built at Barrow-in-Furness by Vickers Ltd. under the supervision of officers of the Royal Navy. It was jestingly called the *Mayfly*, and unfortunately it did not. It broke its back when coming out of its shed for its first trial flight.

During 1910 H.M. Corps of Royal Engineers, commonly known as the Sappers, acquired a Wright biplane from the Hon. Charles Rolls, the founder of the Rolls-Royce Company, and one of our earliest aviators. It was housed at the Aircraft Factory at Farnborough, which was run by the Royal Engineers. Later the Aircraft Factory was called the Royal Aircraft Factory and became the chief aeronautical research department, staffed by civilians, under the War Office.

In 1910 and 1911 other elementary aeroplanes were acquired by the Royal Engineers and the Air Battalion, R.E., was formed officially by the War Office. It was established at Lark Hill on Salisbury Plain, alongside some aeroplane sheds which had been built there in 1910 by permission of the War Office by a company called the British Colonial Aeroplane Co. Ltd. which was founded by Sir George White, of Bristol, who was the great pioneer and exploiter of electric tramways. This company is now known as the Bristol Aeroplane Co. Ltd. and is famous all over the world.

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In that same row of sheds, which still existed in 1939, was one which had been built by Mr. G. B. Cockburn, in which he housed the very first aeroplane which had been built by Henry Farman. In another shed was a Blériot monoplane which belonged to Captain J. B. D. Fulton, R.A., a Gunner officer who had bought the machine out of awards made to him by the War Office for improvements in artillery. Thus Lark Hill became the nucleus of the Army's aviation.

I must also record that in 1910 another Gunner officer, Captain Bertram Dickson, bought another Farman biplane at his own expense and flew it at flying meetings at Bournemouth and Blackpool and Lanark. He demonstrated it at Army manoeuvres on Salisbury Plain, but the High Command was not impressed.

During 1911 the Navy decided that it also must have some heavier-than-air craft, as its lighter-than-air ship had come to grief. Consequently their Lordships of the Admiralty were pleased to allow three Naval Officers and an Officer of the Royal Marines to learn to fly at Eastchurch in the Isle of Sheppey, on aeroplanes which were built by the Short Brothers—now famous as the builders of the Empire flying-boats. These officers were Lieut.-Commander C. R. Samson, R.N., who died in 1929 when he was an Air Commodore (retired); Lieut. Reginald Gregory, R.N., who died in about 1930 as a Lieut.-Commander, commanding a destroyer on the China Station; Lieut. Arthur Longmore, who is now Air Marshal Sir Arthur Longmore, K.C.B., D.S.O., and has served on the Air Council and held most of the higher Commands in the R.A.F.; and Captain Louis Gerard, Royal Marines, now an Air Commodore (retired).

The aeroplanes were built to the order of and lent to these officers by Mr. Frank McClean, now Sir Francis McClean, who also owned the aerodrome, which he let for a shilling a year to the Aero Club, not then Royal. The instructor of these officers was Mr. G. H. Cockburn—already mentioned.

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Air affairs at the Admiralty were put under Captain Murray Sueter, R.N., a pioneer of submarines, who had been in charge of the building of the airships at Barrow. He is now Rear-Admiral Sir Murray Sueter, K.C.B., M.P.

And that was the beginning of Service Aviation, or of the Flying Services.

In 1912 their Lordships of the Admiralty and the Army Council agreed to co-operate in developing Service Aviation. So a Central Flying School was formed at Upavon on Salisbury Plain, a few miles to the North of Lark Hill. Officers of the Navy and of the Army were to be taught to fly there and were to learn the rudiments of Service flying as imagined in those days—for nobody had any experience of such a thing and the senior officers of the Navy and of the Army did not believe that aeroplanes could become a serious weapon. They regarded them only as possible scouts, if and when much more developed mechanically.

The Director of Military Aviation at the War Office at that time was Brigadier-General David Henderson, D.S.O., who, when he died shortly after the War 1914-18, was Lieut.-General Sir David Henderson.

The Commandant of the new Central Flying School was Captain Godfrey Paine, R.N., who died some years ago as Rear-Admiral Sir Godfrey Paine, after having been an Air Vice-Marshal R.A.F. His Chief Staff Officer, who afterwards became Assistant Commandant, was Major Hugh Trenchard, of the Royal Scots, who a year or so earlier had been invalided home from Nigeria to die. He is now Marshal of the R.A.F. the Viscount Trenchard, the great leader of the Royal Flying Corps in the Field during the War, and the creator and commander of the Independent Air Force in 1918. Also he laid the foundations of the Royal Air Force as it is to-day, and he reformed the Metropolitan Police.

Obviously the one little Central Flying School on Salisbury Plain was not big enough to supply the needs of both the Services, and consequently each Service started to train

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more pilots and observers and mechanics on its own account.

The Central Flying School not only trained Naval Officers and Army Officers but it took in civilians, both officers and men, for a Special Reserve of the Royal Flying Corps who, if the Central Flying School had existed as a joint concern for any length of time, would presumably have chosen for themselves whether to work with the Navy or with the Army.

Fate decided that war should break out in 1914 after the C.F.S. had only existed for two years, and then in fact the pilots who had been trained at the Central Flying School did split up between the Navy and the Army.

Officially the Royal Flying Corps consisted of a Military Wing, which meant an Army Wing, which had its Headquarters at Farnborough close to the Aircraft Factory, and of a Naval Wing which had its Headquarters at Eastchurch, as well as the joint Central Flying School.

The officer who commanded the Naval Wing was Commander Romney Samson, R.N., one of the Navy's pioneers. The officer who commanded the Military Wing was a Hussar, Major Frederick Sykes—now Lieut.-General Sir Frederick Sykes, K.C.B., D.S.O., who was recently Lieutenant-Governor of Bombay.

The Military Wing at the start was formed into three squadrons. No. 1 was balloons and kites and small airships, and lived in the Aircraft Factory. No. 2 Squadron, for some reason which I have never been able to discover, was planted at Montrose in Scotland up above Dundee. No. 3 Squadron was placed on Salisbury Plain above the village of Netheravon, where it was within a short hop by air of the Central Flying School to the North and Lark Hill to the South. And when Netheravon was established Lark Hill was handed over to civilian enterprises. Later on No. 4 Squadron was formed at Farnborough.

During 1913 the Naval Wing of the Royal Flying Corps

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tended to diverge more and more from the Military Wing. The Short Brothers, who had set up a factory at Eastchurch, before the pupils were sent there from the Admiralty, were building a variety of aeroplanes on floats, as well as landplanes. A fresh batch of officers and men was sent to Eastchurch to learn to fly.

The experimental flying with the seaplanes was done mostly by Commander Samson, R.N., and Lieut. Longmore, R.N. Gordon Bell, a civilian pilot, was the test pilot for Short Brothers. During the year seaplane stations were built at Yarmouth, at Felixstowe, and at Calshot on Southampton Water.

During this year another important divergence in policy between the Naval Wing and the Military Wing began to show itself. In August 1912 a military aeroplane competition had been held at Lark Hill. Various foreign and English aeroplanes competed—I use the word English advisedly because then as now no aeroplanes of Scottish, Welsh, or Irish design existed.

There is interest in noting that the first flight was made by an R.F.C. officer in an Avro biplane, to see whether the air was calm enough for the professional pilots of the Trade firms to perform in it. The officer was Capt. Brooke-Popham—now Air Chief Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., recently Governor of Kenya Colony.

The competition was won strictly according to the rules by a weird biplane designed and built with his own hands by Mr. S. F. Cody, who had been employed by the Aircraft Factory for some years as a builder and experimenter with man-lifting kites, a form of aircraft which was only developed to a very limited extent. Cody had left the Aircraft Factory to build his aeroplane and so was a free competitor. Unfortunately his machine was of a type which can best be described as a dead-end design. That is to say, it performed up to a certain point, but its development could not be carried farther. Any engineer will have come across similar dead-end designs in his own profession.

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At the same time a young engineer named Geoffrey de Havilland, who was employed at the Aircraft Factory, had devised a biplane which as it was a Government product could not compete for the prizes offered. But, piloted by Mr. de Havilland, who was also an officer of the Reserve of the Royal Flying Corps, it did all the tests, *hors concours*, and performed better than anything else in the trials imposed on the competitors.

According to the conditions certain of the aeroplanes which performed well in the competition were bought. Unfortunately, two of the most promising killed their pilots and observers a few weeks after the competition, and Cody's dead-end design was such that hardly anybody was able to fly the machine.

Consequently, in spite of protests and of arguments in favour of giving independent constructors and experimenters Government encouragement, the War Office decided to standardize on Mr. de Havilland's design, which was officially called the B.E. type.

There has been much argument about the meaning of the letters B.E. The machine was a tractor biplane, that is to say it had an airscrew in front which drew the machine along. At the same time the Aircraft Factory was building another experimental type which had a pusher airscrew, that is to say a propeller, properly so-called, behind. And that type was known as the F.E. The explanation generally given was that B.E. stood for Blériot-Experimental because the Blériot monoplane was the first successful tractor aeroplane seen in this country. And the letters F.E. were supposed to stand for Farman Experimental because the Farman biplanes, of which several had been brought to this country from France, were regarded as the prototypes of pusher or propeller-driven aeroplanes.

The B.E. type definitely proved itself to be one of the best if not the best of the world's aeroplanes, and further models were developed until the B.E.2c was produced. The figure 2 stood for the second type of the original B.E. design, and the

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small letter c indicated that it was the third modification of that second type.

Because the B.E.2c was so good, General Henderson, the Director of Military Aeronautics, who as a good soldier knew that multiplication of types, whether of transport vehicles or of weapons, in the Field is a bad thing, with the advice of his Technical Officers, including presumably the civilian experts at the Aircraft Factory, which by that time had been dignified by the title Royal Aircraft Factory, decided to standardize the B.E.2c as the equipment of the Military Wing of the Royal Flying Corps.

This may seem to be a comparatively minor matter and have little relation to the formation of an Air Ministry years later. But in fact it was the key to the whole development of Service Aviation.

In the meantime Commodore Sueter, who had been promoted from Post-Captain by that time, in charge of the Air Department of the Admiralty, acting on the advice of his Naval Engineer Officers, adopted an exactly opposite policy. They handed out orders to various independent designers. One could hardly call them aircraft firms in those days, judging by what we call aircraft constructing firms to-day, but an aeroplane which cost £1,000 was considered quite an important product, and an aeroplane which cost £3,000 was a great achievement.

The result of this policy of the Air Department at the Admiralty was that Short Brothers, the Sopwith Aviation Co. Ltd.—founded by Mr. T. O. M. Sopwith, who has since become famous as an international yachtsman—the Blackburn Aeroplane Co. Ltd., and A. V. Roe & Co. Ltd., whose Avro aeroplanes became the standard training machine of the world, were firmly established. So when War broke out in 1914 they were in a position to supply aeroplanes of their own designs.

The War Office bought a few Blériots from France and bought some Farman biplanes from Mr. George Holt-Thomas, a wealthy enthusiast for aviation whose fortunes were founded

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in the now unhappily defunct *Graphic*. Mr. Holt-Thomas induced Mr. Geoffrey de Havilland to join him and started the Aircraft Manufacturing Co. Ltd., from which originated the D.H. series of aeroplanes which as Service aeroplanes and as civil air transport machines are famous everywhere.

CHAPTER TWO

The War

The Divorce of the R.N.A.S. from the R.F.C.—Naval Rank Titles—The First Four Squadrons of the R.F.C. for France—Ignorance of Air War—Neglect of the R.N.A.S. by the Navy—Christmas Raids, 1914, on Wilhelmshaven and Cuxhaven—The R.N.A.S. in Belgium and the Middle East—The R.F.C. Educates the Army—The Failure of B.E.s—The Fokker Scourge

By the Summer of 1914 people in official positions became convinced that a war with Germany was coming. I may say that a great many less important people in the Navy and Army knew for years before that such a war must come. In fact a Naval Officer said to me five or six years before the War that every time a torpedo flotilla went up the North Sea with war-heads on its torpedoes, purely for practice, every snotty in every torpedo boat was convinced that they were going to blow up the locks of the Kiel Canal.

During all this time the divergence between the Naval and Military Wings of the R.F.C. had been growing wider and wider. The letters R.F.C. had come to mean definitely the Military Wing and nothing else, and the personnel of the R.F.C. wore a uniform of a novel type designed by Lieut.-Colonel Sykes—recently promoted to that rank. The Navy people wore their Naval uniform with a gold eagle badge to show that they belonged to the Flying Branch of the Navy.

At last on July 1, 1914, the Admiralty decreed that the Royal Naval Air Service should come into being as a separate Service and as a Branch of the Navy. They agreed to carry on their bargain about the Central Flying School, presumably with the idea of pooling information and encouraging friendly co-operation between the aviators of the two Services.

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Here there is interest in noting that when the R.N.A.S. was formed it adopted rank-titles of its own. And these rank-titles became substantive ranks in the Royal Navy. Flight Sub-Lieutenants and Flight Lieutenants ranked with Sub-Lieutenants and Lieutenants, R.N. A Squadron Commander, R.N., ranked with a Lieutenant-Commander. A Wing Commander ranked with a Commander and a Wing Captain ranked with a Post-Captain, R.N.

Although the Navy's Flying Service was known as the R.N.A.S., these ranks were substantive ranks in the Royal Navy. A few officers still survive who were either invalided out before the R.A.F. came into being on April 1, 1918, or were allowed to resign from the Navy for some specific industrial or political reason. And these officers are still entitled to be addressed by these strange ranks which no longer exist.

The dissociation between the two Flying Services was further emphasized during July 1914. The Royal Flying Corps collected all its squadrons at Netheravon in July for combined exercises. The gathering was facetiously called the Concentration Camp. The name at that time had a certain sinister significance because of the alleged barbarity of the British Army's concentration camps during the South African War. But it had not acquired the still more unpleasant connotation which it has to-day.

The squadrons had hardly dispersed to their respective stations when war broke out. The squadrons were equipped with B.E.2cs., Henry Farman biplanes, Maurice Farman biplanes, and a few Blériot monoplanes. The B.E.2cs. predominated.

Also in July Prince Louis of Battenberg, who was First Sea Lord, and Mr. Winston Churchill, who was First Lord of the Admiralty, arranged a review of the Fleet, for which practically all the seaplanes of the R.N.A.S. were assembled at the new Naval Air Station at Calshot. Actually this turned out to be a complete Naval Mobilization. To the Navy's amazement His Majesty King George V did not come to review his Fleet.

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"Political reasons," unspecified, were given as an explanation of his absence. And instead of sending the Reservists home after the Review was over and laying up the Reserve ships the Fleet was kept fully mobilized.

The result was that when War was declared a week or two afterwards the British Fleet was already in being, and prevented the German Fleet from breaking out into the great oceans where it might have done even more damage to our supplies of food and war material than did the submarines.

When war broke out four squadrons of the R.F.C. flew to France. These were Nos. 2, 3, 4, and a newly formed No. 5 Squadron. No. 1 Squadron, kites, balloons, and airships, was not re-formed as an aeroplane squadron till some months later. These squadrons did their best to co-operate with the Army during the Retreat from Mons to the Marne and afterwards during the advance from the Marne to the Aisne, and then during Lord French's historic movement round to the Belgian Frontier and the famous line through Ypres, Albert, and Arras to Noyon where our Right joined the French Left and sat for most of four years.

In those early days troops knew nothing about aeroplanes and fired on anything overhead on general principles. Our aeroplanes were the targets for British troops as often as they were for German troops. But fortunately nobody knew anything about hitting aeroplanes, so comparatively little damage was done.

The greatest trouble of the Royal Flying Corps in those days was to induce the Army to believe (A) that they had seen anything and (B) that they understood the significance of what they had seen.

Nobody knew anything about fighting in the air, and I believe that the first enemy aeroplane which was forced to land was driven down by Lieut. Fenton Vesey Holt, who was killed only a few years ago in an air accident as an Air Vice-Marshal R.A.F. He threatened the German pilot with a revolver held over the side of a single-seat aeroplane.

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Purely as a side-issue, I may place on record the fact that the first casualty in any air war, and I believe the first British soldier to be wounded in the War 1914-18, was Sergeant Jillings, R.F.C., who was flying as an observer with Lieut. Maurice Noel, R.F.C. An authentic German bullet fired from the ground penetrated his seat and caused an unpleasant but not serious wound which was treated on the spot when he landed. Happily he survived to serve throughout the War and for many years afterwards as a commissioned officer. This incident had nothing directly to do with the formation of the Air Ministry.

In these early days of the War the Royal Naval Air Service found itself with little to do. It had some months before taken over the little experimental airships from the R.F.C. pending the formation of No. 1 Squadron R.F.C. as an aeroplane squadron. The Navy had on its own account acquired two non-rigid airships of considerable size, one from the Parseval Company in Germany and one from the Astra-Torres Company in France.

These two ships, during the fine weather of August and September which followed the outbreak of war, patrolled the Straits of Dover and the North Sea right over to the Belgian Coast with an unfailing regularity which gave a number of officers in the Flying Service a faith in airships which still lingers and is quite likely to be revived.

The seaplanes from the coastal stations, and a certain number of landplanes also, patrolled the waters near the coast looking for enemy submarines and occasionally mistaking British submarines for them. In those days bombs which could be dropped from aircraft were as primitive as the aeroplanes themselves, so fortunately the damage done when such mistakes were made was nothing.

Quite early in the War the Air Department at the Admiralty entirely on its own account and without any help from the Navy proper put up a performance which had far-reaching results. They commandeered three cross-Channel boats, rigged

up coverings on their aft decks, which could scarcely be dignified by the name of aeroplane sheds, and on these ships embarked a number of Short biplanes which already in those days were designed to fold their wings in the best modern style.

These three little ships were sent up the North Sea and on Christmas Day, 1914, the seaplanes were lowered over the side by the ships' derricks, unfolded their wings, and flew off and bombed Cuxhavn and Wilhelmshavn and some ships of the German Navy which were lying at anchor at the mouth of the Elbe. The bombs were small and fairly harmless and did little damage.

One officer, Flight-Lieut. Douglas Oliver (who died recently), when he had nothing else to drop, hurled his mascot golliwog on to the deck of the battleship *von der Tann*. But the moral effect was considerable because it showed that German coastal towns were liable to attack, and consequently troops and ammunition and weapons were immobilized there when they might have been more use at the Front. From that very small beginning the present system of vast aircraft carriers which can hold squadrons of aeroplanes, both deck-flyers and floatplanes, has grown.

While the German Armies were advancing into Belgium the Air Department at the Admiralty conceived the brilliant idea of sending a detachment of the landplanes of the R.N.A.S. to act as scouts for the Belgian Army, which had no aeroplanes of its own, and to do any damage which could be done to the enemy. This little squadron, under Squadron Commander Gerrard, the Marine who had learned to fly at Eastchurch, had quite a good deal of moral effect.

Flight-Lieut. Reginald Marix dropped one of his little bombs through the roof of a Zeppelin shed at Düsseldorf and set fire to an airship inside it. Squadron-Commander Spenser Grey dropped some bombs into the railway station at Cologne and caused much disorganization. Flight-Lieut. Warneford got a V.C. for setting fire to a Zeppelin in the air over Belgium.

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And Flight-Lieut. Bigsworth attacked another, which, although he did not set it alight, so frightened it that it broke its back against a house when trying to land.

At first this little detachment operated from Antwerp and then, when the small Belgian Army was forced back till it only held a corner of its own country, the R.N.A.S. detachment settled down at Dunkerque. There it became a very considerable fighting force, and it had a definite influence on the future history of Service Aviation.

At first the pilots and observers tried to co-operate with the ships of the Dover Patrol and its famous monitors, in the bombardment of German positions on the Belgian coast. But the Navy people were even more conservative in their estimation of the reliability of spotting for gunfire from aeroplanes than were the Army people.

During those first few months of the War the Army had at any rate learned that the R.F.C. could see things behind hills which they did not see, and that, as most of them were soldiers, they knew what the things were which they saw. The Navy on the other hand knowing that most of the personnel of the R.N.A.S. were amateurs who had enlisted straight off the street, had no faith in their judgment or in their ability to see what they saw. Consequently when the monitors were bombarding coastal positions their gun-layers preferred to take their spotting from a look-out on the top of Nieuport Church tower rather than from an aeroplane which was flying directly over the target.

The fact that the gentleman at Nieuport could only tell them whether their shells were bursting short or long and could see nothing of whether they were bursting right or left did not influence them. And when an order was issued from the Dover Patrol that the R.N.A.S. at Dunkerque were not to bomb certain positions on the coast because the High Command wanted to keep them as targets for the monitors, the R.N.A.S. people became rather disheartened.

The result was that the R.N.A.S. developed a private air

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war of their own. The Air Department at the Admiralty still had the power to buy anything it wanted and to commandeer anything else, so the detachment at Dunkerque was very well equipped. They had the newest of new aeroplanes and the latest things in bombs and bomb-sights which were by then being developed quickly and efficiently.

They used to go out and bomb positions in Belgium and in France. They used to fight German aeroplanes. And they soon became very efficient. As they were operating on the Left of the British Army they used to keep fairly closely in touch with the R.F.C. and the Army pilots soon acquired a hearty respect for their ability as war-makers, even though the discipline and demeanour of the R.N.A.S. on the ground did not come up to Old Army standards.

Nobody can ever value too highly the work which was done by the Engineer Officers of the Royal Navy under Commodore Sueter. Just before the War Mr. Glenn Curtiss, the famous American pioneer aviator, had brought the world's first flying-boat to this country and had demonstrated it at Brighton, thanks to the enterprise of Captain Ernest Bass, a well-to-do sportsman of the time, with whom was joined later Lieut. John Porte, R.N., retired, who had been invalided from the Navy suffering from tuberculosis.

As a result of that exhibition a number of Curtiss flying-boats were built by Mr. Curtiss in America and were imported into this country as quickly as possible. John Porte, in spite of his disease, was allowed to rejoin the Navy, and after commanding a Naval Flying School at the Hendon Aerodrome for a few months, he was put in command of Felixstowe, where, with the Curtiss boats as prototypes, he developed the big flying-boats which did so well on the North Sea patrols during the War, and were themselves the forerunners of the big flying-boats which are used by the Flying Services of all nations to-day and by the British Empire services and American trans-oceanic services.

The floatplanes of the R.N.A.S., at first all built by Short

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Brothers and later built by the Fairey Aviation Co., Ltd., which had been founded very early in the War by Mr. C. R. Fairey who had previously been Works Manager at Short's, were taken in seaplane carriers of sorts to the Eastern Mediterranean and even to the Indian Ocean, where they did excellent work.

Short floatplanes from the ex-Isle-of-Man steam-packet, the *Ben-my-Chree*, habitually flew across Palestine over the Judæan Hills to bomb the Hejaz railway. Others were taken to the Indian Ocean to hunt for submarines which were alleged to be laying mines in the Persian Gulf and at the mouths of Indian harbours.

During the lamentable occupation of the Gallipoli Peninsula, when the Army was very short of aeroplanes, Wing-Commander Samson, R.N., with a strong detachment of the R.N.A.S., installed themselves on the Island of Mudros and co-operated vigorously with the Army. But even there the warships of the Fleet continued to ignore the spotting by the R.N.A.S.

In case readers may think that I lay too much emphasis on this unwillingness of the Navy to co-operate with its own Air Service I may say that these facts can easily be proved, and that they had a very definite bearing on the amalgamation of the Flying Services and the formation of the Air Ministry.

During 1915 while all these things were developing, affairs in the air over France developed in a way which definitely influenced the coming into being of the Air Ministry. Comparatively early in that year a young Netherlander named Anthony Fokker, who had before the War designed a most peculiar contraption which was intended to be an uncapsizable aeroplane, had set up in Germany as a maker of aeroplanes. He had offered his strange apparatus to the Royal Naval Air Service and the officers who were sent to inspect it had very properly turned it down as unpractical.

He was well established in Germany when war broke out, and as the German Army did not take over that particular type

of aeroplane he set to work to produce what was in effect a modified version of the French Morane monoplane, a single-seater which our people and the French had found very effective. To it he fitted a gear with which a pilot could fire a machine-gun between the blades of a revolving airscrew.

Anthony Fokker, who was a very clever engineer, devised means of making aeroplanes quickly and so towards the end of 1915, the air in France was full of comparatively high-speed, for those days, single-seat fighters, which shot down our excellent but slow B.E.2cs. in numbers which seriously affected the moral of the R.F.C.

CHAPTER THREE

The Air Enquiry

Lord Kitchener's Ambitions—Colonel Trenchard's Achievements—Agitation in France, at Home, in the House of Lords, and in the Commons—Colonel Faber's "Murder Charge"—Mr. Pemberton Billing—The Composition of the 1916 Air Enquiry Committee—The Interim Report—The Full Report—An Air Board Recommended

By the end of 1915 the state of the Flying Services in France had become so bad that people at home who were immediately concerned with air affairs, particularly the relatives of pilots and observers in the Royal Flying Corps, became gravely concerned. Even senior officers in the Field, though naturally they could not admit that the R.F.C. was being defeated in the air, were trying by round-about means to bring pressure on those at home who were responsible for the equipment of the R.F.C. to produce aeroplanes which were better fitted to meet what was already becoming known as the "Fokker Scourge."

At the same time other people at home whose personal interests were more centred in the Royal Naval Air Service were equally concerned about the lack of use which was being made of the Naval Units in France and elsewhere. Although the R.N.A.S. machines at Dunkerque were carrying on quite a successful little war on their own account the Navy was not using its Air Arm either for coast patrols against submarines or for gun-spotting along the Belgian Coast as it might have done. The result was that an agitation arose in Parliament concerning the administration of both the Flying Services.

At the end of 1915 General Henderson came back from France to take charge of the Department of Military Aeronautics at the War Office. He was succeeded by Major-General

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Hugh Trenchard as General Officer Commanding the R.F.C. in the Field.

At the beginning of the War, as already stated, General Henderson had gone to France in command of the four first squadrons of the R.F.C., with Lieut.-Colonel Frederick Sykes as his Chief of Staff and with Major Brooke-Popham, who had previously commanded No. 3 Squadron on Salisbury Plain, in charge of supplies and technical affairs—that is as Quarter-master-General.

Major Trenchard, who at that time was Assistant-Commandant at the Central Flying School, was brought to Farnborough, where he was given the task of building up a new Flying Corps in a row of empty sheds with the help of a few officers who were unfit for active service. Every officer, man, and machine which was fit for active service had gone to France to bring the historic First Four Squadrons up to strength.

In this difficult job he was backed wholeheartedly by Lord Kitchener of Khartoum, the Secretary of State for War. There is a legend that Lord Kitchener went down to Farnborough to see how things were getting on and astonished everybody by announcing that he wanted sixty squadrons of the R.F.C. as soon as they could be got together. At that time people were thinking in terms of perhaps twenty or thirty squadrons, as enough for the simple little reconnaissances of the little British Expeditionary Force—the Old Contemptibles as they were nicknamed by the Press on the strength of an imaginary remark which was attributed to the Kaiser Wilhelm. But K. of K. was already thinking in terms of Kitchener's Army.

The story also is told that when a few of the pilots who had by then been trained went up to show him what they could do, Lord Kitchener said that before long he wanted to see our aeroplanes flying in regular formations like troops of cavalry on the ground. There is enough truth in those stories to show how far ahead Lord Kitchener was looking.

He did not get his sixty squadrons that year or the next

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year. But Major Trenchard, who was promoted to Lieut.-Colonel on taking command at Farnborough, and was promoted again to Brigadier-General before he went to France, not only produced more squadrons than had been thought possible at the start but instilled into the personnel that high spirit which persisted through the War and has been handed on as a tradition to this day. It held the R.F.C. together during its worst times throughout the War and did much to diminish the effect of the Fokker Scourge.

The two leaders of the agitation in Parliament were Lord Montagu of Beaulieu in the House of Lords and Colonel Walter Faber in the House of Commons. Colonel Faber was a Conservative Member who represented everything which the word Conservative had meant in politics for fifty years. But he was so moved by what he had heard first-hand from France that he startled and shocked the House by saying that the pilots of the R.F.C. were being "murdered rather than killed" by the inadequacy of their equipment.

Another leader of the agitation was Mr Joynson Hicks, K.C., an eminent lawyer, a pillar of the Church of England, and an eminently respectable Conservative, who later on became Home Secretary and was created Viscount Brentford. He quoted in the House on February 16 a letter from a friend in France who said:—"How regularly these official reports seem to me to lie as to our mastery of the air."—A pretty serious accusation that. Sir Henry Dalziel, Mr. Ellis Griffith, Mr. Evelyn Cecil and Captain Bennett Goldney backed him up.

In the House of Lords on February 17, Lord Oranmore and Browne, Lord Meath, Lord Peel, and Lord Mayo all made equally serious attacks on the administration of the Flying Services. As the result of all this a Joint Committee, known as the Derby Committee, after its Chairman, was appointed to investigate the whole question.

This Joint Committee consisted of Lord Derby, Lord Montagu, Admiral Vaughan-Lee, Commodore Sueter, General Henderson, and Colonel Ellington (now Marshal of the R.A.F.

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Sir Edward Ellington). Lord Derby and Lord Montagu retired from the Committee after a short time and on April 17 Sir Arthur Markham asked in the House why they had done so, and referred to the "constant friction and jealousies between the War Office and Admiralty in connection with the Air Services."

On April 12 Mr. Billing published a complete scheme for an Imperial Air Service, which was very like the R.A.F. of to-day.

In spite of Colonel Faber's startling "murder" phrase the agitation was conducted along most proper and orthodox lines until a new agitator appeared who was fanatical enough to overstep what are generally regarded as the limits of seemly debate. In all new movements or great agitations, seemingly, a fanatic is needed who is ready to go to gaol or to be shot, or burnt at the stake or crucified for the faith that is in him. Then the mild reformers come along and ask for the same things more politely, and get them because their requests seem so mild after those of the dreadful fanatic. In this cause the fanatic was Mr. Noel Pemberton Billing, M.P.

In the very earliest days of aviation, before anybody had flown in this country, Mr. Billing was already experimenting with gliders. He acquired a piece of waste land at Fambridge in Essex and set up workshops there, at which several people who to-day are well known in aviation had their first experience of making aircraft, even though the aircraft did not fly. He continued his experimental work in 1909 and 1910 and in 1911 he acquired workshops at Southampton where he founded a firm called the Supermarine Aviation Works.

There is interest in noting that the name survives to-day as a branch of the great Vickers concern and has for several years supplied to the Royal Air Force a series of the fastest aeroplanes and best flying-boats in the World; Supermarine floatplanes won the Schneider international Seaplane Trophy for this country in 1931. And the Supermarine Spitfire single-seat monoplane fighter was at the outbreak of War on Sep-

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tember 3, 1939, reputed to be the fastest fighting machine in the World. Many squadrons of it were already in full working order in the Royal Air Force.

Very soon after the outbreak of War in 1914 Mr. Billing, who was already building an interesting type of flying-boat, offered his services to Commodore Murray Sueter at the Air Department of the Admiralty, and handed over the management of the works to his chief assistant Mr. Hubert Scott-Paine—now known all over the World as the owner of the British Power Boat Co. Ltd., as well as the designer and chief engineer of those famous sea-going craft.

Backed by Commodore Sueter Mr. Pemberton Billing organized the famous air raid from Nancy, in the East of France, on the Zeppelin factory at Friedrichshafen on Lake Constance (the Bodensee), and commanded the whole expedition up to the moment when the three machines piloted by Squadron-Commander John Babington, Squadron-Commander Featherstone Briggs and Flight-Lieut. S. V. Sippe, left the aerodrome at Nancy. He was not himself a pilot so he did not actually lead the raid. Thereafter he devoted himself to various inventions chiefly concerned with armament, and was allowed to keep his interest in the Supermarine Works, in which a number of novel and interesting types of aeroplanes were produced to his ideas. All of which shows that he had a practical knowledge of air war and of its needs.

Towards the end of 1915 he became so impressed, or depressed, not to say obsessed, by the way air affairs were going in France that he resolved to leave the Navy and go into Politics for the good of the Flying Services. In January 1916 he was allowed to resign from the Royal Naval Air Service with the rank of Squadron Commander and a letter of thanks for his services. So that he might not be charged with war-profiteering he sold out of the Supermarine Aviation Works for a sum which just allowed him to carry on his political work to the end of the War. He tried to get into Parliament for Mile End, with the hired help of Mr. Horatio Bottomley and

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Mr. Ben Tillett, but was defeated. Eventually he was elected by his own efforts Member for East Hertfordshire on March 10.

In the House his methods were entirely unorthodox. His vehemence and his plain speaking were definitely not as done in those days. He made many political enemies, and a considerable number of personal enemies among Members of the Government and their out-and-out supporters. But he also made a vast number of personal friends among members of all parties.

He repeated over and over again Colonel Faber's charge that pilots were being murdered rather than killed, and he elaborated on the theme by telling in the House stories which he had heard from people on active service.

The newspapers took him up as something new in M.Ps., and for a considerable time he was strongly backed by Lord Northcliffe and his *Daily Mail*.

The more orthodox and respectable M.Ps. followed his lead at some distance, and after some months the Government was compelled to take notice of the growing agitation.

The result was that on May 10, 1916, a Committee of Enquiry was appointed to investigate the alleged maladministration of the Flying Services.

The Chairman of the Committee was Mr. Justice (Sir Clement) Bailhache, K.C., an eminent lawyer. With him sat General Sir Horace Smith-Dorrien, who had commanded one of the two Corps of the British Expeditionary Force when it first went to France (Sir Douglas Haig commanded the other), and had been invalided home from France in 1915; Mr. H. A. Shortt, K.C., who later became Solicitor-General; Mr. Butcher, K.C.; Mr. Balfour-Brown, K.C., Sir Charles Bright, a well-known engineer whose father had laid one of the trans-Atlantic cables; and the Hon. Sir Charles Parsons, who, with the late Horace Short, had produced the Parsons Turbine which revolutionized marine engineering, and many forms of electrical power-production.

This Committee sat at the House of Commons and examined

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a number of witnesses. The Admiralty refused to be treated as prisoner at the bar before this Committee and very few allegations were made against the Naval side. In fact none could be made against the R.N.A.S. itself because the policy which had been laid down by Commodore Sueter and his Engineer Officers had in fact given the R.N.A.S. the finest equipment of any of the air arms of any of the belligerent nations. And the allegation of the misuse of its air arm by the Navy as such was difficult to prove because direct evidence was practically ungettable.

Therefore the Enquiry virtually turned into the investigation of charges against the administration of the Royal Flying Corps. General Henderson was present at the meetings of the Committee, attended by a Staff Officer who was also an eminent lawyer in private life, and cross-examined the witnesses, or perhaps one should rather say the accusers, with considerable skill. Lord Montagu, Mr. Joynson Hicks, and sundry others, among whom I humbly made certain suggestions for the improvement of the equipment of the R.F.C., appeared before the Committee. But the star turn of the Enquiry was certainly Mr. Pemberton Billing.

He started by producing a long list of the names of officers who, he stated, had been murdered rather than killed, either through bad design and/or construction of the aeroplanes which they flew, or through being asked or ordered to fly in conditions for which their aeroplanes and/or motors were unsuited. He also put forward a number of suggestions for the improvement of equipment and for what he considered to be the better employment of men and machines.

As one who appeared before that Committee I am glad to have this opportunity of bearing witness to the intelligent understanding which the members showed of the extensive subject which they had to consider. None of them was in any way concerned with aviation and they approached the subject without prejudice and with open minds. General Smith-Dorrien, one of the finest officers who ever served his King,

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saw everything from the purely military point of view, Sir Charles Bright and Sir Charles Parsons (when he was there) saw things as engineers, and the various K.Cs. brought trained legal minds to consider the evidence, or rather the accusations.

In September 1916 the Committee produced an Interim Report, which was generally considered by those who knew most about air affairs to be, as so many Reports of Royal Commissions are, a whitewashing report to let down as lightly as possible those who had been responsible for a policy which had produced a very grave state of affairs in France. That is a way we have in this country, and the fact that a Report, especially an Interim Report, seems fatuous or miserably inadequate to those who know the facts, does not mean that those in the highest places, to whom the Report is addressed, are left ignorant of the underlying facts which are not mentioned in the Report.

Primarily the Interim Report was concerned with abolishing Mr. Pemberton Billing's specific charges of murder. Each of the instances which he mentioned was explained away, generally on the plea that the pilot was killed in the normal execution of his duty and by the fortunes of war.

If one admits that men were killed in the execution of their duty and by the fortunes of war when they were hurled in masses against uncut barbed wire and multitudinous machine-guns, when tanks should have been available to crush a way through the wire, and heavy artillery and bombing aeroplanes should have blasted the trenches to pieces and ground-straffing aeroplanes should have cleared them of defenders, then one may agree that there can be no complaint when men are killed in doing necessary but dangerous duty in aeroplanes which are inadequate for their purpose. And I feel sure that no member of the Air Council of the past few years, who went through the War as a pilot or a commander of a squadron in 1915, will disagree from that statement.

The full Report of the Committee was published between Christmas Day and December 31, 1916. It was a heavy volume

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and it contained many weighty reflections on the state of affairs which had been revealed to the Committee. Among other things it contained as an appendix a Minority Report signed by Sir Charles Bright and Mr. Shortt which refuted certain of the statements which had been made in the Interim Report—and it contained a phrase which seemingly laid the Montrose Ghost—one of the most authentic ghosts on record. But that is another story which would be out of place in a solid history of this sort.

But the most important recommendation made by the Committee was that an Air Board should be created by the Cabinet for the express purpose of supervising the design, construction, and production of aeroplanes, motors, armament, and all other material for both the Flying Services, and to co-ordinate output so that competition between the Navy and the Army should not result in one Service getting, by what in those days had come to be known as wangling, better supplies than the other Service.

CHAPTER FOUR

The Turn of the Tide

The Sopwith Two-Seat Fighter—The R.N.A.S. Saves the R.F.C.—The Sopwith Pup, Camel, and Snipe—Encouraging Trade Enterprise—Captain Barnwell—The Bristol Fighter—Geoffrey de Havilland—The D.H.9—Mr. Rowledge—The Rolls-Royce Falcon—Major Halford—The Siddeley Puma—Mr. Folland—The S.E.5A—Mr. Pierson—The Vickers Vimy—The Handley Page Bomber—Short Brothers—The Fairey Co.—Saunders of Cowes—Need for Co-ordination—Profiteering—The First Air Board—The Hotel Cecil—The Hotel Bolo—Kingsway Captains—Strand Subalterns—Churchill's Pessimism

In the meantime, while the Committee was sitting and meditating and preparing its Report, great changes had taken place in the Field, or rather in the air.

Towards the end of 1915 the Sopwith Aviation Co. Ltd. had produced a two-seat biplane with a motor of 130 h.p., which practically revolutionized air warfare as then understood. It was known to all in the Services as the "1½-Strutter"—because of the peculiar arrangement of the struts between the fuselage, or body, of the machine and the upper plane.

Its great feature as a fighting machine was that instead of the pilot sitting behind, without anything to prevent a faster enemy from shooting him in the back, and the observer sitting in front and doing as best he could with a rifle with which he could only shoot upwards and sideways under the upper plane, the Sopwith had a fixed gun which fired forward through the airscrew and it had a gunner who sat behind the pilot and could fire a swivelling gun sideways and backwards and upwards and downwards, to a limited extent, and so could protect the pilot from attacks from behind.

Most of the B.E.s. were shot down because the faster Fokkers

were able to attack them from behind without the crew of the B.E. being able to hit back.

This Sopwith biplane had been developed for the Naval Air Service and was an immediate success. The enemy's pilots seeing what looked like an ordinary two-seater cruising about, proceeded to swoop down on its tail in the approved fashion, and were blown to pieces by a burst from a well-mounted machine-gun behind the pilot.

R.N.A.S. squadrons which were equipped with this machine had such success that the Air Department of the Admiralty ordered what in those days seemed a lot of them—probably 100 or so. The French technical aeronautical people also saw the machine and made arrangements to build it in France under the supervision of the Sopwith Co. One of the accusations against the War Office before the Committee was that this type of machine had actually been ordered by the French Army before it was ordered by our own War Office for the R.F.C. If I remember rightly the excuse was made that a sample machine had in fact been ordered but had not been delivered before the French ordered theirs.

Anyhow, when the prolonged and bloody Battle of the Somme began in July 1916, when the Committee had ceased to sit and its Interim Report not yet been issued, the Royal Naval Air Service was able to send two or three squadrons of these "1½-Strutters" to help the R.F.C., and the Air Department at the Admiralty was able to let the R.F.C. have enough machines of the type to equip several squadrons.

Also during that time the Sopwith Co. had produced a little single-seat biplane fighter which looks very curious in these days but was considered quite wonderful in 1916. It was called the "Pup" because it was so small and manœuvrable. It was not so fast as the enemy's fighters but it was far quicker in its movements and so the pilot of a Pup could dodge out of the way of a Fokker and, in the kind of combat which in those days was known as a dog-fight, it could turn so quickly

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that the pilot was often able to shoot down the Fokker before the Fokker could get out of his way.

Until it was superseded by the faster Sopwith Camel, which in turn was superseded by the still more powerful Sopwith Snipe, the Pup was regarded as one of the finest fighting machines in France. And pilots who flew it had an enduring affection for it.

Actually the last Pup in France was flown out there, as an ordinary transport vehicle, by Brigadier-General C. T. R. Higgins, who landed it practically in the dark on an open field near Velu Wood about ten days before the Armistice in 1918.

The Pups and the $1\frac{1}{2}$ -Strutters, by their performance in France, in 1916, emphasized by the reports which were sent home by squadron and wing and brigade commanders, did much to convince the War Office of the error of its ways. The old policy of over-standardization was forsaken and enterprising aircraft manufacturers were encouraged to produce new and improved types for the R.F.C.

Naturally they took some time to get through from the drawing-board to the air over the field of battle, but everybody was so enthusiastic that things which seemed impossible were done, and by 1917 a whole crop of new types was coming through.

At Easter 1917, while the Air Board was coming into being and trying to get a grip on the problems before it, Captain Frank Barnwell of the Bristol Company, who was killed in 1938 in an accident to a tiny monoplane which he had built for himself for fun, had produced in quantities the World-famous Bristol Fighter, with a Rolls-Royce Falcon motor (designed by Mr. Rowledge), which turned out to be one of the most remarkable fighting machines of the War. As in the Sopwith $1\frac{1}{2}$ -Strutter the gunner sat at the back to protect the tail and the pilot had two machine-guns in front which he aimed "by wearing ship to suit," like Judson's flat-iron gunboat in Kipling's story. But the powerful Rolls-Royce motor

(270 h.p. was a lot in those days) gave it a performance better than that of many single-seaters.

Just about the same time Mr. Holt-Thomas's Aircraft Manufacturing Company produced the D.H.9, which with a 220 h.p. B.H.P. motor (designed by Major Halford), which was ultimately developed into the Siddeley Puma, became one of the most satisfactory light bombers of the period. This was the ninth type of aeroplane designed for the Aircraft Manufacturing Co., Ltd., by Captain Geoffrey de Havilland, the designer of the re-created B.E.2c, who had been persuaded by Mr. Holt-Thomas to leave Farnborough and become his chief designer.

The Royal Aircraft Factory at Farnborough, stirred to emulation, activity, and effort by the success of the Sopwith Co., had produced to the design of Mr. H. P. Folland, now the chief of Folland Aircraft Ltd., near Southampton, a single-seat fighter called the S.E.5A, which rivalled the Sopwith as a destroyer of hostile aeroplanes—S.E. stood for "Scout Experimental" (*cf.* B.E. and F.E.), for when the design was begun a single-seater was regarded as a fast scout, corresponding to a single cavalry *vedette*, and nobody had thought of the deadly single-seat fighters. That idea only sank in after Anthony Fokker had showed us how to prevent bullets from hitting the blades of the airscrew when fired between them from behind. The 5A indicated that this type was the first modification of the fifth re-design of the S.E. type.

The Vickers Company in emulation of the Handley Page twin-motor bomber produced the Vickers Vimy, designed by Mr. Rex Pierson, a twin-motor bomber which did quite good work.

In the meantime other firms were hard at work. Some of them building experimental machines of their own type, others building Sopwiths or S.Es. under sub-contract. The R.N.A.S. air station at Felixstowe was building big flying-boats and having duplicates built under sub-contract. Short Brothers and the Fairey Co. were building seaplanes in vast quantities for the R.N.A.S.

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All sorts of firms were being pressed into the production of aircraft or aircraft parts. Famous boat-builders such as Saunders of Cowes, and May, Harden & May of Hythe, on Southampton Water, were building hulls for flying-boats or the complete aircraft. Piano manufacturers and wood-working firms of all sorts were building component parts such as tail-planes, rudders, fins, and elevators for the regular aircraft firms.

The output grew to an enormous extent. Each firm competed against the rest for raw material, whether timber, steel parts, light alloys, fabric. Prices went up like a rocket and supplies went down.

The fact became evident that some kind of co-ordinating and restraining power was needed, and that some kind of technical authority was also needed to assure that the best use was made of the material available.

For example, such was the council of perfection among the War Office technicians, and even among the Naval engineers of the R.N.A.S., that designers and builders were only allowed to use straight flawless pieces of timber for the spars of aeroplanes. Often whole spars were scrapped by the inspectors of the Aeronautical Inspection Department, when a perfectly good spar could have been made by splicing the outer end of one defective spar to the inner end of another and rejecting the defective tips and butts respectively.

Splicing and built-up timber work was not allowed, although everybody knew that if the splicing were properly done and the spar were broken in a crash it would break outside the splice.

The result of all this sort of thing was shocking profiteering by the suppliers of material, and an immense waste of man-hours, which after all are the only true Capital, and of material. Consequently when the Air Board came into being it found that there was plenty for it to do.

The first Air Board was actually formed officially on May 26, 1916, long enough before the Interim Report of the Committee, which only shows what public opinion can do.

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Lord Curzon was the President. The other members of the Board were Lord Sydenham, Admiral Tudor, Admiral Vaughan-Lee, representing the Admiralty, General Sir David Henderson and General Branner, representing the War Office, and Major John Baird, M.P., commonly known as Johnny Baird, who later became Lord Stonehaven and Governor-General of Australia. But this Board had no real power.

Later Lord Cowdray was appointed Chairman of the Air Board, and Mr. William Weir (of G. & J. Weir, the Glasgow pump-makers) who was Knighted on February 11, 1917, became the chief technical member.

The Air Board took over for its offices the Hotel Cecil, which stood where Shell House is to-day, the most prominent edifice on the Embankment. The Hotel Cecil was one of those grim mid-Victorian edifices which was full of gilt mouldings and aspidistras. The atmosphere was enough to kill any enterprise which any of its inmates ever had.

Each little bedroom became the office of an Acting-Sub-Assistant-Deputy-Director of something or other. And in spite of the installation of inter-departmental telephones and all the rest of it, the result was complete chaos.

With the laudable intention of establishing good feeling and promoting co-operation, the Board decreed that each departmental chief and each sub-departmental chief and each of their assistants in one Service should have an opposite number in the other Service. The result in effect was that each of these officials tried to score over his opposite number by getting something for his own particular contractor, in the way of raw material or component parts or accessories, which his opposite number had been unable to get. But, what with personal rivalry and professional rivalry and mere individual stupidity, chaos was worse confounded.

Some time before this a Frenchman, who had been an official under the Egyptian Government named Bolo Pasha, had been discovered acting as a spy for Germany. He was tried, convicted, and shot. Somehow his name tickled our curiosity

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warped English sense of humour, and the office of the Air Board at the Hotel Cecil was nicknamed the Hotel Bolo, or the Bolo House. The reason given by the inventor of the name was that everybody in the Hotel Bolo was either actively interfering with the progress of the War, or was doing nothing to help its progress.

So well was the nickname known that if one wanted to go to the Air Board, or later on to the Air Ministry, one merely told the taxi-driver to go to the Hotel Bolo, or the Bolo House, and he went without further question.

So far as the Air Board itself was concerned its members were beyond reproach, honest and enthusiastic and hard-working. But, as their names show, none of them, other than Sir William Weir, was a business man of the sort that was needed to make a success of dealing with the conflicting interests concerned, or with the intrigues and plots which were going on behind the scenes.

We must remember that the Air Board was concerned wholly with technical things such as research, design, development, and production, plus, I believe, the placing of contracts, whether they might be for the R.N.A.S. or for the R.F.C. The Board had nothing to do with the administration, discipline, or operation of either the R.N.A.S. or the R.F.C. Therefore it was fundamentally in a weak position because it could only exercise authority on the manufacturers of aircraft, motors, raw material, parts, and accessories.

On April 3, 1917, Mr. Pemberton Billing, M.P., extracted from Mr. Ian Macpherson, the Under-Secretary for War, the admission that there were at that time under the Air Board (in the Hotel Bolo) 207 Commissioned Officers of the R.F.C., of whom only 29 were pilots. Dr. Macnamara, Under-Secretary for the Admiralty, admitted to him also that there were 209 Commissioned Officers of the R.N.A.S., of whom 38 were pilots.

Thus one can understand the conflict between the active-service pilots and the people who had dug themselves into

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comfortable jobs at home on the strength of some technical knowledge and were called contemptuously by people home on leave, "Kingsway Captains" and "Strand Subalterns" and "Bolo Brigadiers."

Things became so bad, emphasized as they were by occasional raids by Zeppelins and aeroplanes, that public meetings were held to protest against the inefficiency and ineffectiveness of the Flying Services that on April 14 Mr. Winston Churchill, then out of office and an Independent M.P. said in the House—"Never since the Battle of the Marne has the situation been more serious than at present."

CHAPTER FIVE

Boards and Boards

An Air Ministry Demanded—Darkness and Composure—
Air Raid Warnings—Complaints from Overseas—The Air
Ministry Promised—Reformed Training—General Branker
on Air Defence—A Great Imperial Air Service—The Mastery
of the Air (Diverse Opinions)—The 1917 Air Board—
Reprisals (The *Daily Express* Meeting)—The London Air
Defence Area—The Balloon Barrage

ALTHOUGH all this agitation had primarily to do with the technical affairs of the Flying Services, and although the Air Board was formed for the express purpose of co-ordinating supply and looking after design and production, behind all the agitation was a popular feeling that if the enemy were to be defeated in the air we must have a bigger, better, and stronger Air Arm, which should have a Ministry of its own and should be allowed to wage air war on its own account without being subordinate either to the Navy or the Army.

Right through 1916 air raids on this country had been steadily increasing. Most of them were Zeppelin raids and at first they did little damage. Also several Zeppelins were brought down by aeroplanes, and by anti-aircraft guns and we were told by those in High Places to possess our souls in Darkness and Composure and that if we did so the raiding aircraft would do little harm.

This doctrine, I may say, was announced some time after the "Business as Usual" doctrine had been exploded, and people had made up their minds that we were too busy with an all-in war to think of other business.

But business men, especially those who were busy on armament work, found that the mere presence of an airship over or even along the coast, or the trespassing of one of our

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own aeroplanes or seaplanes over a prohibited area—which led to its being mistaken for an enemy aircraft—was enough to set the air raid warnings going and to shut down practically all production for the rest of the night.

Furthermore, people in the R.N.A.S. had taken to writing home, or telling people when they were on leave, how disgustingly the R.N.A.S. was being dis-used, rather than ill-used or misused, by the Navy. Likewise people with the R.F.C. complained at home that they were not properly equipped to catch enemy air-raiders, and that even when co-operating with the Army in land battles they were not used as they might have been used. And the most farsighted people in both the Flying Services began to see that so long as they were tied down to be used only as new weapons of the Navy and the Army, air war as such would never be properly developed.

In fact the whole agitation began to take shape as a demand for a single Flying Service, one and indivisible, which would have its own Ministry, and would rank with but after the Navy and the Army.

This demand became so insistent that on December 18, 1916, Sir George Cave, who was then Home Secretary, announced that an Air Ministry would be formed by the new Coalition Ministry, of Mr. Bonar Law and Mr. Lloyd George, which came into being after the Asquith Ministry fell on December 6.

The announcement of the creation of an Air Ministry was somewhat hastened by the publication of the Report of Mr. Justice Bailhache's Judicial Committee which had been appointed to enquire into the administration of the Royal Flying Corps.

Though carefully worded, so as not to hurt the feelings of those in official positions, the Report confirmed all the criticisms made by those who had agitated for adequate Air Power during the first year of the War. Those agitators got a certain amount of satisfaction out of the fact that practically

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all the most needful reforms had been made quietly some months before the report was published.

The strange ways of Governments and their Departments are illustrated by the fact that although the announcement of the creation of an Air Ministry was made in December 1916 the Air Ministry did not in fact come into existence till a full year later.

In the meantime air affairs generally were improving. Major-General John Salmond, who had done a lot of good work in France, was brought home to organize the training of new pilots and Major-General Brancker was put in charge of equipment.

There is interest here in noting that in March 1917 General Brancker, addressing a meeting, expressed the belief that defence against airships was a task which could be handled with sufficient certainty, but that defence against aeroplanes was a much more difficult matter. He said that our best defence in the future would be to build up such strength in the air that no other nation would *dare* to attack us for fear of the consequences. He said, "In this direction lies the way to the creation of a great Imperial Air Service." How true those words were have been shown by the development of the Royal Air Force since those days.

General Salmond is now Marshal of the Royal Air Force Sir John Salmond, and ranks with but after an Admiral of the Flëet, or a Field Marshal in the Army. General Brancker was killed in the wreck of the unfortunate airship R.101 in France in 1930.

The diversity of opinion which existed on the subject of the Mastery of the Air, the prime reason for the existence of an Air Force, may be shown by three quotations. On April 12, 1917, Lieut.-General Sir David Henderson, then Director-General of Military Aeronautics, speaking at Birmingham, referred to—"what people were foolish enough to call command of the air, which had never existed—neither command nor mastery."

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Major J. L. Baird, who had become Parliamentary Secretary to the Air Board, also spoke in the House of Commons on April 26, 1917, of the mastery of the air as a thing which never had existed and never could exist. But in a despatch dated December 23, 1917, General Sir Douglas Haig, Commanding the General Expeditionary Force in France, said—"I desire to point out that the maintenance of the mastery in the air, which is essential, entails a constant and liberal supply of the most up-to-date machines, without which even the most skilful pilot cannot succeed." And further on in the same despatch he said—"Fighting in the air has now become a normal procedure in order to maintain the mastery over the enemy Air Service."

Here we may record the composition of the Air Board proper which succeeded Lord Derby's Committee, which is generally regarded as the first Air Board. The new Air Board, which was officially constituted on January 2, 1917, was composed as follows:

The President was Lord Cowdray, then better known as Sir Weetman Pearson, the famous engineer and contractor.

Commodore Godfrey Paine, C.B., M.V.O., R.N., who had been first Commandant of the Central Flying School, was appointed Director of Air Services by the Admiralty and was made Fifth Sea Lord of the Admiralty, as well as being a Member of the Air Board—he thus became Officer Commanding the R.N.A.S.

Lieut.-General Sir David Henderson, K.C.B., Director-General of Military Aeronautics, and a Member of the Army Council, represented the R.F.C. on the Air Board.

Sir William Weir, already mentioned, was appointed Director of Aeronautical Supplies.

Mr. Percy Martin of the Daimler Co. of Coventry was appointed Director of Aero-Engine Supplies. These two last-named represented the Ministry of Munitions on the Air Board.

The Parliamentary Secretary to the Board was Major J. L. Baird, M.P.—now Lord Stonehaven.

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The growing importance of air raids was admitted by Sir George Cave, the Home Secretary, when on June 14 he said in the House—"It would be worth the enemy's while to have these raids every day" because "if you give warning to all munition factories, you put a stop to the manufacture of munitions, which will have an effect on the Fighting Forces and the lives of our soldiers and sailors." Further he said—"A warning alone results in the loss of a day for many thousands, perhaps hundreds of thousands, of working people."

During June of 1917 public feeling in favour of what were popularly called reprisals, and pronounced "reprizzles," became of great importance. A meeting was organized by the *Daily Express* at the London Opera House, now the Stoll Picture Palace in Kingsway, at which Lord Inverclyde, Mr. Pemberton Billing, and Mr. Basil Peto spoke. The meeting unanimously and emphatically demanded a policy of reprisals, but up to the end of 1917 no direct action was taken in that direction.

Lord Cowdray interviewed the Parliamentary Air Committee, a self-appointed unofficial body of Members of Parliament, ostensibly of all Parties, who were interested in air affairs, and demonstrated to them that much was being done by the Air Board to set right matters about which there had been so much complaint.

This period may be taken as practically the turning-point in the history of the Flying Services. Thereafter the work of the Air Board during the preceding months began to bear fruit.

The first official intimation of the coming into being of the new Air Force, and of the new Air Ministry, which had been promised in December 1916, appeared in a War Office Communiqué dated October 12, 1917, which stated that General Henderson had been "deputed to undertake special work" and "had been lent for such service." That service was the organization on paper of the new Air Force, the Bill for which was introduced into Parliament the following month.

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Major-General John Salmond was appointed Director-General of Military Aeronautics in place of General Henderson, and Major-General Brancker, hitherto Deputy-Director-General of Military Aeronautics, was appointed to a Command in Egypt.

About the same time the fact was disclosed officially that Major-General E. B. Ashmore, who had commanded a brigade of the R.F.C. with distinction in France, and later had commanded an artillery brigade, had been placed in command of the London Air Defence Area. He was the originator, though he did not claim to be the actual inventor of the mechanism, of the balloon barrage which is now such a prominent feature in air defence. He also invented and organized the Observer Corps which with its listening apparatus keeps track of the approach and direction of enemy aircraft, and by an elaborate system of telephonic communication keeps the Defence Commands informed of such movements so that patrols of interceptor fighters have some idea of where to go and look for invading aeroplanes.

CHAPTER SIX

The Air Ministry is Born

The Air Force Bill (November 1917)—Lord Rothermere, Air Minister—The First Air Council—A Single Air Force (Service Views)—The Royal Aircraft Establishment—The King's Last Message to the R.F.C.—The King's First Message to the R.A.F.—The First R.A.F. Gazette

THE Air Force Bill, which created the Air Force and the Air Ministry, was introduced in the House of Commons on November 8, 1917. The Second Reading and the Committee stage were passed on the 12th and the Report stage on the 13th. During these discussions, rather than debates, Mr. Pemberton Billing divided the House more than one hundred times on Amendments which he proposed. He and his two or three faithful followers were always defeated by the rest of the House. But most of his proposed Amendments have since been incorporated in the organization or administration of the R.A.F. as Hansard will show to the investigator.

Naturally everybody expected that Lord Cowdray who had done such valuable work as President of the Air Board would be appointed our first Air Minister. But apparently, before the Bill had even passed the House of Commons, Mr. Lloyd George, then Prime Minister, had offered the post of Air Minister to Lord Northcliffe privately.

Lord Northcliffe refused the post in a letter which was published in various papers on November 15. This was the first intimation that Lord Cowdray had of the offer to Lord Northcliffe, and Lord Cowdray at once resigned his Presidency of the Air Board in a dignified letter of protest which was also published in the Press. Thus the Air Ministry started in an atmosphere of unpleasantness. This was not necessarily an evil

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omen, for any racing man will confirm the belief that a slow starter is generally a strong finisher.

Eventually Lord Northcliffe's brother, Lord Rothermere, was appointed President of the Air Council and our first Air Minister.

Sir William Weir was appointed Director-General of Aircraft Production by Mr. Winston Churchill who was then Minister of Munitions, and considerable alterations were made on the production side of the Air Board, which was in due course to be absorbed by the Air Ministry. Mr. Henry Fowler (later knighted), who had been for many years Chief Engineer of the Midland Railway was appointed Assistant Director-General of Aircraft Production. Lieut.-Colonel W. Alexander was made Controller of the Supply Department and Lieut.-Colonel J. G. Weir, younger brother of Sir William Weir, was made Controller of the Technical Department, and Sir Arthur Roberts was appointed expert financial adviser.

Mr. Bertram Jones, a well-known and much-respected figure in City finance, was transferred from the Ministry of Munitions, where, under Sir Andrew Weir, later Lord Inverforth, he had supervised finance, to the new Air Ministry to promote economy and to watch the way in which money was spent. He was knighted for his services after the War.

The first Air Council was constituted by an Order in Council of January 2, 1918, and the Air Council was established as from January 3. It was constituted as follows:

Secretary of State and President of the Council—Lord Rothermere.

Chief of the Air Staff—Major-General Sir Hugh Trenchard, K.C.B., D.S.O.

Deputy Chief of the Air Staff—Rear-Admiral Mark Kerr, C.B., R.N.

Master-General of Personnel—Commodore Godfrey Paine, C.B., M.V.O., R.N.

Comptroller General of Equipment—Major-General W. S. Brancker.

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Director-General of Aircraft Production in the Ministry of Munitions—Sir William Weir.

Administrator of Works and Buildings—Sir John Hunter.

Parliamentary Under-Secretary of State—Major J. L. Baird, C.M.G., D.S.O., M.P.

Additional Member of Council and Vice-President—Lieut.-General Sir David Henderson, K.C.B., D.S.O.

Secretary to the Council—Mr. W. A. Robinson, C.B.

Assistant Secretary—Mr. H. W. McAnally.

Thus the Air Ministry came officially into being. But its birth was not at all an easy affair. Both the Services were strongly opposed to having their respective Air Arms taken away from them. The Admiralty, which had for so long scorned the R.N.A.S., seemed loth to part with it. But most of the personnel of the R.N.A.S., because of the treatment that they had received from the Navy in their early days, were anxious to get out of the Navy and into the Air Force.

On the other hand, practically everybody in the R.F.C. was against the combination Air Force. Officers and men alike were proud of belonging to the British Army and of inheriting its magnificent traditions and its historic glory. They had no desire to be pushed off into an aerial wilderness without any particular Promised Land in the form of a fixed establishment in sight.

Many people at the time thought that the better policy would have been to leave the Navy its R.N.A.S., now that the Admiralty had discovered its affection for it, on the condition that it confined its operations entirely to the work of the Fleet. Similarly the Army might have retained its Royal Flying Corps, whose operations would have been limited to Army Co-operation and to purely tactical reconnaissance and bombing behind the enemy's lines—according to the definition that Tactics are concerned with the Field of Battle and Strategy with the Area of War.

A brand-new Air Force, built up of those Regular Officers of the Navy and Army who wished to join it, but formed, in

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the bulk, of the personnel of the R.N.A.S. and R.F.C. who had never been Regular Officers or men of either Service, would then have been free to carry on air war as such. It would have done all the air fighting and all the long-range or strategic bombing, whether against munitions-producing areas or against enemy aerodromes in the back areas. And it would have done regular coastal patrols on the look-out for submarines.

The elected representatives of the free and independent voters thought otherwise, and the Royal Air Force was formed parthenogenetically. That is to say it sprang fully armed from the collective brain of the House of Commons as Minerva sprang fully armed from the brain of Jove.

There was much discussion about the name of the new Force. Many wanted to call it the Imperial Air Service, so that it could include the Dominions and Colonies. A good many objected to the title the Royal Air Force because the initials R.A.F. had until then indicated the Royal Aircraft Factory at Farnborough which, because of the unpopularity earned by the B.E.2c during the Fokker Scourge, and the trouble which the R.F.C. had with the Raf motors designed and built at first by the Royal Aircraft Factory, was not at all popular. This trouble was overcome by changing the name of the Farnborough Factory to the Royal Aircraft Establishment, which it bears to-day.

Although the Air Ministry, or rather the Air Council, came into being officially on January 2, 1918, the Royal Air Force as such did not exist until the end of the financial year 1917-18. General Trenchard came home from France at the end of 1917, as Chief of the Air Staff of the new Air Service, to plan and institute all the Staff organization which would be needed in taking over the Royal Naval Air Service and the Royal Flying Corps and welding them together into a third Fighting Service.

General John Salmond succeeded General Trenchard as G.O.C. R.F.C. in the Field. After the great German push in March 1918 had been stopped, the King sent, on March 27, a

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telegram to Sir Douglas Haig saying: "I wish to express to General Salmond and all ranks of the Air Services of the British Empire in France to-day my gratification at their splendid achievements during this great battle. I am proud to be their Colonel-in-Chief."

On the same day the Air Ministry telegraphed to General Salmond: "The Air Council congratulates you and all ranks of the R.N.A.S., R.F.C., and Australian F.C., on the splendid work carried out during this great battle. We are following their great deeds, and know that they will keep it going."

General Salmond replied, in a despatch which has become historic: "Very many thanks for your Council's congratulations, which are very much appreciated by all concerned. All ranks have their tails well up, and the superiority of British over enemy airmen has never been more marked."—Possibly "tails up" was a trifle colloquial for an official despatch, and unfortunately it was seized upon by the daily Press and has been used at intervals as an epithet for Sir John Salmond ever since. But at the time it did express exactly the mental state of the Flying Services. Also it was technically accurate, because in diving to the attack an aeroplane does have its tail well up.

The interesting point is that although the R.N.A.S. was not as a whole at that time under the command of the Air Ministry for administration, or even for operations, there were so many detached squadrons operating under General Salmond of the R.F.C. and the Australian F.C. that the telegram was worded to include the R.N.A.S.

Officially the Royal Air Force came into being on April 1, 1918. Naturally there was a good deal of joking on the subject. Those who were opposed to the single Service called the R.A.F. a *Poisson d'Avril*.

On the day of its formation H.M. the King sent the following telegram to Lord Rothermere: "To-day the Royal Air Force, of which you are the Minister in charge, comes into existence as a third arm of the defences of the Empire. As General-in-Chief, I congratulate you on its birth, and I trust

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that it may enjoy a vigorous and successful life. I am confident that the union of the Royal Naval Air Service and the Royal Flying Corps will preserve and foster that *esprit de corps* which these two separate Forces have created by their splendid deeds.—George R.I.”

To this Lord Rothermere replied: “Lord Rothermere, with his humble duty to Your Majesty, begs leave on behalf of the Royal Air Force to convey an expression of their heartfelt appreciation of the gracious message addressed to them by their General-in-Chief. Lord Rothermere is confident that the assurance of Your Majesty’s interest and confidence will assist every officer and man in the Royal Air Force in the task of continuing the great tradition of the Royal Naval Air Service and the Royal Flying Corps—traditions which as Your Majesty has personally seen, have never been more gloriously maintained than in the struggle now proceeding.”

On April 2 an Order in Council notified that all officers of the Royal Navy, the Royal Marines, the Royal Naval Reserve, and the Royal Naval Volunteer Reserve serving with the R.N.A.S., or Army officers serving with the R.F.C., and all R.N.A.S. and R.F.C. officers became automatically attached to the R.A.F. On the same date the *London Gazette* contained a list of numerous R.A.F. Staff appointments. This was the first R.A.F. Gazette.

Actually a Gazette had appeared on March 22 which notified the appointment of the first batch of General Officers and Staff Officers to the Royal Air Force, but it was not in the ordinary sense an R.A.F. Gazette.

Some idea of the growth of the Royal Air Force may be gathered from the fact that on April 11, Mr. Kellaway, Parliamentary Secretary to the Ministry of Munitions, announced that for the first two months of 1918, as against the first two months of 1917, when the output was already fairly good, the output of aeroplanes had increased 223 per cent and of motors 245 per cent.

CHAPTER SEVEN

The Coming of the Independent Air Force

General Trenchard's Resignation from the Air Council—Sir Godfrey Paine and General Henderson Resign—The Arrangement of R.A.F. Areas—Agitation in Parliament and Press—Sir Arthur Roberts Resigns—Lord Rothermere Resigns—Debate in the House on the Resignation—Sir William Weir Appointed Air Minister—"Wully" Weir's Way in the Air Ministry—General Trenchard's Independent Air Force in France—Baron Weir of Eastwood—The R.A.F. Uniform

ON the surface all seemed to be going very well with the new Air Force, but those of us who were more or less behind the scenes knew that there had been considerable friction inside the Air Ministry ever since the Air Council had been formed.

On April 14 (a Sunday) people were astonished by the announcement that Major-General Sir Hugh Trenchard had resigned his post as Chief of the Air Staff. And on April 15 an official announcement was issued that Major-General Frederick H. Sykes, C.M.G., who will be remembered as the officer who first commanded the Military Wing, R.F.C., had been appointed Chief of the Air Staff *vice* General Trenchard.

In the House of Commons, Major Baird stated that General Trenchard—"took a view as to the powers and duties of the Chief of the Air Staff which the Secretary of State of the Royal Air Force could not accept."

On the same day a long letter of explanation, or, as some considered it, self-justification, from Lord Rothermere to Colonel Faber, M.P., appeared in the Press.

On April 16 an announcement was made that Sir Godfrey Paine and Sir David Henderson had both tendered their

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resignations. Sir Godfrey Paine afterwards withdrew his resignation, but Sir David Henderson's was accepted, and that distinguished officer thenceforth transferred his services to the Army.

Sir David Henderson's departure from the R.A.F. caused an immense amount of regret. Although he had been primarily responsible for the adoption and over-standardization of the B.E.2c, which was the prime cause of the agitation in 1915 which brought about the appointment of the Air Enquiry Committee, which in turn produced the Air Board, which again produced the Air Ministry, Sir David Henderson's services to the nation had been considerable. He was a fine soldier, and a very great gentleman. His death in 1925 caused much sorrow to all who had served with or under him.

For historical purposes we may here record the arrangement of the Royal Air Force areas in Great Britain which were announced officially on April 15. They were in fact the first manifestation of the area system on which the R.A.F. has been organized ever since. There is also interest in noting that the Air Ministry was compelled to borrow senior officers from the Army and the Navy to organize these areas, for the very good reason that all the senior officers in the R.A.F. had been quite junior officers when war broke out only a little more than three and a half years before. The areas were as follows:

South-Eastern Area—Major-General F. C. Heath-Caldwell, C.B.

North-Eastern Area, Headquarters at York—Major-General the Hon. Sir Frederick Gordon, K.C.B., D.S.O.

South-Western Area, Headquarters at Salisbury—Major-General Mark Kerr, C.B., M.V.O. (Rear-Admiral R.N.). Admiral Mark Kerr before the War had been in charge of a British Naval Mission to the Greek Government, and had taken his certificate as an aeroplane pilot at the age of fifty on a seaplane flying from the Greek Naval Air Station on Phaleron Bay near Athens. He had also held commands in the R.N.A.S. during the War.

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Midland Area, Headquarters at Birmingham—Major-General J. F. A. Higgins, D.S.O. General Higgins was a rather junior Major in the Royal Artillery when he came into the R.F.C. very soon after its formation in 1912. He had particularly distinguished himself as a Wing Commander and Brigade Commander in France. He is now Air Marshal Sir John Higgins, K.C.B., K.B.E., D.S.O. (rtd.).

Scottish Area, Headquarters in Glasgow—Major-General G. C. Caley, C.B. (Rear-Admiral R.N.).

Actually Major-General Charles Longcroft, D.S.O., was appointed to command the Midland Area but resigned the appointment and reverted to Brigadier-General in order to go to France on active service again. He had previously commanded the Training Division in Great Britain after Major-General Salmond left that command to become G.O.C. R.F.C. in the Field.

After Lord Trenchard's resignation on April 14 there was a short period of intense agitation in Parliament and among Air Force people at home, and on April 25 Lord Rothermere resigned his post as Secretary of State for Air.

On the same date Sir Arthur Roberts resigned his appointment as expert financial adviser to the Air Ministry because of disagreement with Lord Rothermere, but he returned later in an honorary capacity to help the new Air Minister.

On April 29 there was a heated debate in the House of Commons on the resignation of General Trenchard, when the fact was made clear that whatever might be the political view, all who were in touch with the Air Force had complete confidence in him and sympathy with him. At the end of the debate an announcement was made that Sir William Weir had been appointed Secretary of State for the Air Force in place of Lord Rothermere.

This appointment was received with general approval. In the Ministry of Munitions Mr. Weir, as he then was, proved himself to be a magnificent organizer of output. And when he came over to the Air Board he was equally effective. Efficiency

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is a word which is highly valued by many people, but effectiveness which gets things done in spite of inefficiency is obviously a greater force.

The first time I went to see him at the Hotel Bolo I asked Sir William Weir frankly what he intended to do about the place. He replied equally frankly that he had two alternatives, one was to burn the whole place down and start fresh, the other was to push the whole chaotic mass along by sheer brute force. Burning the place down in the middle of a war and rebuilding it would, he said, cause considerable inconvenience to the Flying Services in the Field. He therefore thought that the better policy would be to push.

The effectiveness of his pushing was shown by the increase of more than 200 per cent in the output of aeroplanes and motors during rather less than a year in which he was the propelling force.

One of the worst complaints about the various Departments of Air Board of that period was that all kinds of unsuitable people were digging themselves in as indispensables, although they knew nothing about their jobs. I produced a few instances of that sort of thing for Sir William Weir's edification. He admitted that there were such instances, but he added that the best inspector of steel that he had had in the Ministry of Munitions was the barber who used to shave him in Glasgow. Which after all seems natural, because a good judge of a razor ought to be a good judge of steel.

One of Sir William Weir's first acts was to invite General Trenchard to return to the post of Chief of the Air Staff. General Trenchard regretfully declined to take the job, because General Sykes had been appointed to it and he was not going to oust a former friend and colleague from an important post. Consequently Lord Trenchard remained unemployed for just a month.

Then, on May 13, Mr. Bonar Law announced in the House of Commons that General Trenchard had "accepted the Command of a very important part of the British Air Force in

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France." This proved shortly afterwards to be what was known as the Independent Force R.A.F. It was intended solely for offensive action against munition areas and military objectives generally in Germany. That is to say it was not intended merely to co-operate with the Army.

A part of what one might call its "articles of association" were that it should, when called upon, help the Army in the Field by bombing or otherwise attacking lines of communication along which reinforcements or supplies were being transported to the battle areas. But its chief function was to destroy the sources of supply in Germany itself.

The formation of the Independent Force R.A.F. is in fact a very important mark in the development of the Air Ministry and the R.A.F. It was the first time that an Air Force had been formed for the express purpose of conducting air war without reference or subordination to Army or Navy Commands.

The R.A.F. in France under General Salmond was still directly under the Commander-in-Chief of the Army, Sir Douglas Haig. Its various units were attached to or subordinate to Armies, Corps, and Divisions. General Trenchard's Force on the other hand was not subordinate to the Army Commands but was free to carry on any operations which its General Officer Commanding thought advisable.

When he was required to co-operate with the Army he was in the same independent position in which the Commander of a Naval Force is when he is asked to co-operate with troops ashore. Therefore from this appointment really dates the existence of the Royal Air Force as an entirely separate entity among the King's Fighting Forces.

On June 19 the announcement was gazetted that Sir William Weir had been elevated to the peerage. Later he assumed the title of Baron Weir of Eastwood. Presumably by way of celebrating the occasion Lord Weir next day met a number of Members of Parliament who formed the Parliamentary Air Committee under the Chairmanship of Mr. Joynson Hicks, and allayed their fears concerning the construction of high-powered aero-

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planes for the following year's campaign, and their anxiety about the high rate of casualties in the training of pilots.

During these exciting times the minds of the officers and men of the new Royal Air Force were nearly as much exercised by the question of their uniforms as they were by the perils and adversities which were inflicted on them by the enemy. Even before the formation of the R.A.F. was officially announced, but when its coming was well known, people were beginning to talk on the subject. I have a distinct recollection of a very distinguished General Officer in the R.F.C., with whom I was staying in France, addressing another officer who had freshly come from London on a special mission, saying—"What's all this about the new uniforms they are going to put us into? You're always a dressy short of chap, you ought to know all about it." And then he added grimly, "Lowest form of soldiering, dress; lowest form of soldiering."

The uniform of the new Royal Air Force became a stock joke. Originally it was a light blue, almost the colour of that blue which is so popular on the houses of French villages, and the rank stripes were of gold lace. The cap badge was an elaborate affair of which the most prominent feature was a spray of gold leaves which were disrespectfully likened by their enforced wearers to a bunch of bananas. Nobody attempted to wear it on active service but at home it did much to brighten the dullness of the wartime streets and places of entertainment. Also it provided the high spot in a Drury Lane melodrama, when a half-witted British soldier who had escaped from a prison-camp in Germany threw a fit at his first sight of it in Paris. Definitely that uniform was not one of the Air Ministry's early successes. The design was commonly attributed to a popular star of light opera of the period.

On active service officers and men continued to wear the variegated uniform of their respective Services. The people who had been in the Royal Naval Air Service wore Naval kit sometimes in blue and sometimes in khaki with Naval rank-stripes. Those who had been in the Royal Flying Corps wore

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either the useful double-breasted jacket, commonly known as the "maternity jacket," which had been invented by Major Frederick Sykes when the Corps was formed, or else the tunics of the regiments to which they had originally belonged. Thus one saw in a squadron group photograph some in typical Naval kit, others in Scottish Glengarries and the short jackets with scalloped edges of the Highland regiments, ordinary infantry kit with the ordinary infantry hat, and full R.F.C. kit with the fore-and-aft cap.

After much argument the blue-grey R.A.F. uniform of to-day was evolved, and it has turned out to be a very useful Service dress.

CHAPTER EIGHT

The End of the War

Chaos in the Services—Lord Weir on Civil Aviation—Agitation Against the Air Force—Air Ministry Control of Civil Flying—The Independent Air Force (First Official Despatch)—A Change of Government—Lord Weir Resigns—Mr. Winston Churchill, Secretary of State for War and Air—General Seely, Under-Secretary, Lord Londonderry, Finance Member—The New Air Council—The Casualties of the R.A.F.—Disintegrating the R.A.F.—The Air Estimates

FIGHTING in the air on land and sea ended at 11 o'clock in the morning on November 11, 1918. There followed a period of something like chaos. Most of the people who were in uniform tried to get themselves demobilized as quickly as possible and were held up for months before they could get free of the Fighting Services to return to business. Those whose one desire was to remain in the King's Services were demobilized promptly, much against their will.

For at least three months before the Armistice the end of the war was plainly in sight, and people began to think about the possibility of Civil Aviation. In a speech at the Lord Mayor's Banquet at the Guildhall on November 9, two days before the Armistice, Lord Weir said that "The future of Aviation—the future, perhaps, of the Air Force—will come, I hope, from the need of peaceful commerce rather than from the tragic necessities of war, and one of the duties of the Air Force will be to maintain and still further develop that degree of technical superiority which we have now achieved."

Nevertheless there were still many people who were hostile to the idea of a single Air Force, one and indivisible, separate from the Army and the Navy. Their views seem to have been reflected in a statement in the *Daily Express* on December 18,

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1918. that the Air Ministry was shortly to be abolished, that the Navy would again take charge of Naval Aviation—despite its neglect of the R.N.A.S.—and that the War Office would again take charge of Military Aeronautics. The statement was also made that Lord Weir had resigned his portfolio as Secretary of State for Air. On the following day the statement was officially denied by the Secretary of the Air Ministry, but not by the Cabinet, which alone had the power to confirm or deny such a statement.

There is interest here in noting that Mr. George Holt Thomas, one of the great pioneers of British Aviation, the founder and Managing Director of the Aircraft Manufacturing Co. Ltd., which had developed during the War the series of D.H. aeroplanes designed by Captain Geoffrey de Havilland, announced about this time that he had made all arrangements to begin an aerial passenger service between London and Paris, and was only awaiting Government permission to start it. That was in fact the first manifestation of the development of Civil Aviation which from its earliest days has been controlled by the Air Ministry.

This is one of the peculiarities of the Air Ministry. One might have expected that Civil Aviation would have been placed under the control of the Board of Trade, as it then was before the Ministry of Transport was created. Functions which would have been adequately performed by the Board of Trade were made into experiments by inexperienced bureaucrats.

The Navy does not control the Merchant Marine although it is interested in the development of certain types of merchant ships which may become auxiliary cruisers or mine-sweepers or submarine hunters in time of war, and subsidizes such so that it may have a lien on them. Similarly the Army does not control motor traffic, although it has an interest in certain types of transport vehicles, and subsidizes them accordingly. But from its earliest days after the War 1914-18 the Air Ministry has had a Department of Civil Aviation attached to it. The work of that Department will be discussed in that section of the

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book which is concerned with the organization of the Air Ministry.

On January 1, 1919, the Air Ministry published in *The London Gazette* the first dispatch from an Air Force contingent to have worked independently of the Army and the Navy. This dispatch was written by Major-General Sir Hugh Trenchard, K.C.B., D.S.O. (now Viscount Trenchard), and described the formation and work of the Independent Force R.A.F. from the date of its organization until the Armistice.

It records that on June 5, 1918, General Trenchard took over the tactical command of the Independent Air Force from Field Marshal Sir Douglas Haig and took over the administrative and complete control on June 15. There is additional interest in the dispatch because in General Trenchard's remarks—"Preparatory work on construction of aerodromes, with a view to accommodating a larger force, had been undertaken before my arrival and had been handled with zeal and tact by the General Officer Commanding the 8th Brigade. The work accomplished by General Newall formed a foundation upon which I was at once able to accommodate an increased number of Squadrons."

The officer to whom General Trenchard referred was, at the declaration of war on September 3, 1939, Air Chief Marshal Sir Cyril Newall, who was appointed Chief of the Air Staff in 1937 and was in effect Commander-in-Chief of the R.A.F.

The dispatch describes at length the first operation ever performed in waging an air war as distinct from a land war or a sea war. The document is of particular historical interest, because it describes in considerable detail objectives which General Trenchard ordered his squadrons to bomb with the object of destroying the enemy's sources of supply of armament.

On January 11, 1919, the Government was reconstructed and Lord Weir resigned the office of Secretary of State for Air. The Right Honourable Winston Spencer Churchill was

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appointed Secretary of State for War and for Air, and Major-General J. E. B. Seely, C.B., C.M.G., D.S.O.—later created Lord Mottistone—was appointed Under-Secretary of State for Air and President of the Air Council.

This reshuffle, which had evidently leaked out, was evidently the basis of the rumour already mentioned, that the Air Ministry was to be abolished.

An official statement from the Government was issued on January 15 that these appointments did not in any way affect the independence of the Air Ministry, and that the Marquess of Londonderry would represent the Air Ministry in the House of Lords.

As the result of this the Air Council was reconstituted as follows:

Secretary of State for Air, the Right Honourable Winston S. Churchill.

Under-Secretary of State for Air, Major-General the Right Honourable J. E. B. Seely.

Chief of the Air Staff, Major-General Sir H. M. Trenchard, K.C.B., D.S.O.

Controller-General of Civil Aviation, Major-General Sir Frederick H. Sykes, K.C.B., C.M.G.

Director-General of Aircraft Production and Research, Major-General E. L. Ellington, C.M.G.

Finance Member, the Marquess of Londonderry, M.V.O.

Administrator of Works and Buildings, Sir John Hunter, K.B.E.

Additional Members, Sir Arthur Duckham, K.C.B.; Sir James Stevenson, Bart.; and Brig.-General W. Alexander, C.F.G., D.S.O.

Deputy Chief of the Air Staff, Brig.-General R. M. Groves, C.B., D.S.O., A.F.C.—a Regular Naval Officer who had distinguished himself highly in the R.N.A.S. and had left the Navy to join the R.A.F.

Director of Personnel, Rear-Admiral C. F. Lambert.

An additional appointment was that of Major-General

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(Admiral) Sir Godfrey Paine, K.C.B., M.V.O., to be Inspector-General without a seat on the Air Council.

At the end of the year, before demobilization had properly set in, the Air Force consisted roughly of 30,000 officers and 300,000 men. Its casualties from the outbreak of war on August 4, 1914, to the Armistice on November 11, 1918, were as follows:

		Killed	Wounded	Missing and Prisoners	Interned	Total
Officers ..	..	4,575	5,369	2,794	45	12,787
Other ranks ..	..	1,587	1,876	334	39	3,836
Total ..	..	6,166	7,245	3,128	84	16,623

Although the fact is not officially stated we are left to assume that the list of killed and wounded includes all those who were killed or maimed in the course of training at home or at training establishments in France and Egypt. But I imagine that it does not include pupils who were killed in training in Canada or in the Canadian Schools at Fort Worth, Texas, U.S.A. Those pupils would be all Canadians and as they would only be on probation might not be included in the personnel of the R.A.F. °

With the appointment of Mr. Churchill to the Air Ministry the disintegration of the Royal Air Force began. The Air Estimates were introduced in the House of Commons on March 13, 1919, by Major-General Seely. They amounted to £66,500,000, against the £200,000,000 which they would have been had the war continued "its bright and enthusiastic progress," as one professional war-maker called it. The personnel was to be reduced to 5,300 officers and 54,000 men on a

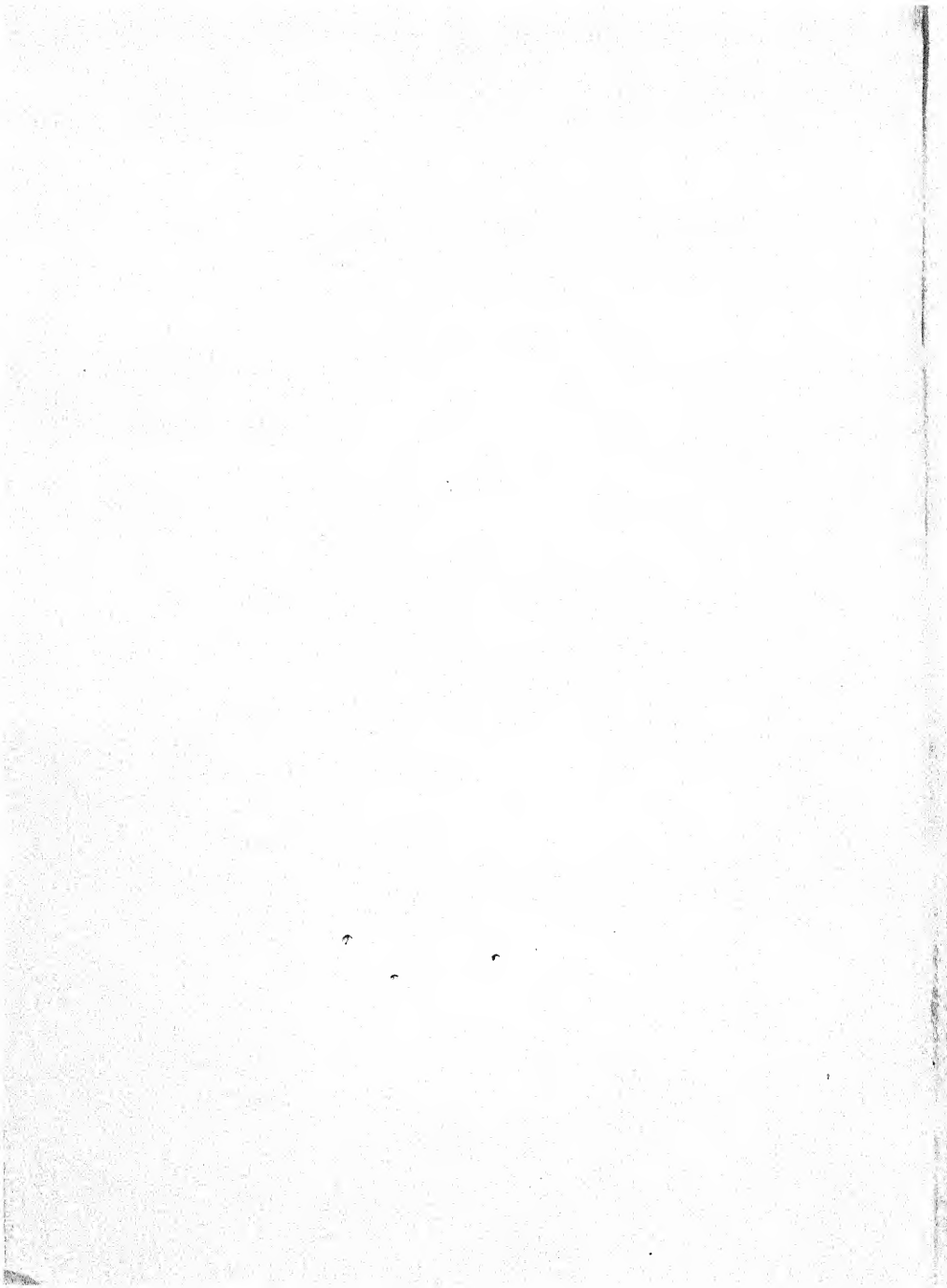
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peace establishment. Of the sum named £3,000,000 was allocated to Civil Aviation and Research.

With those Estimates the war work of the Air Ministry ended, and so closed that period of history which had led up to the coming into being of the Third of the King's Fighting Services and the Ministry which controls it. Therefore we may now turn to the organization of the Air Ministry itself before continuing with what may be regarded as the peace-time activities of the Air Ministry, while bearing in mind the fact that the Royal Air Force has been continually at war from its formation on April 1, 1918, until the declaration of war on September 3, 1939.

A fighting Service which has been at war continuously for twenty-five years naturally has an immense advantage in having among its officers and men a high percentage who if they have not actually engaged in air fights, have at any rate flown over the fire of rifles and machine-guns, and have had continual practice in attacking enemies on the ground with machine-gun fire and with bombs.

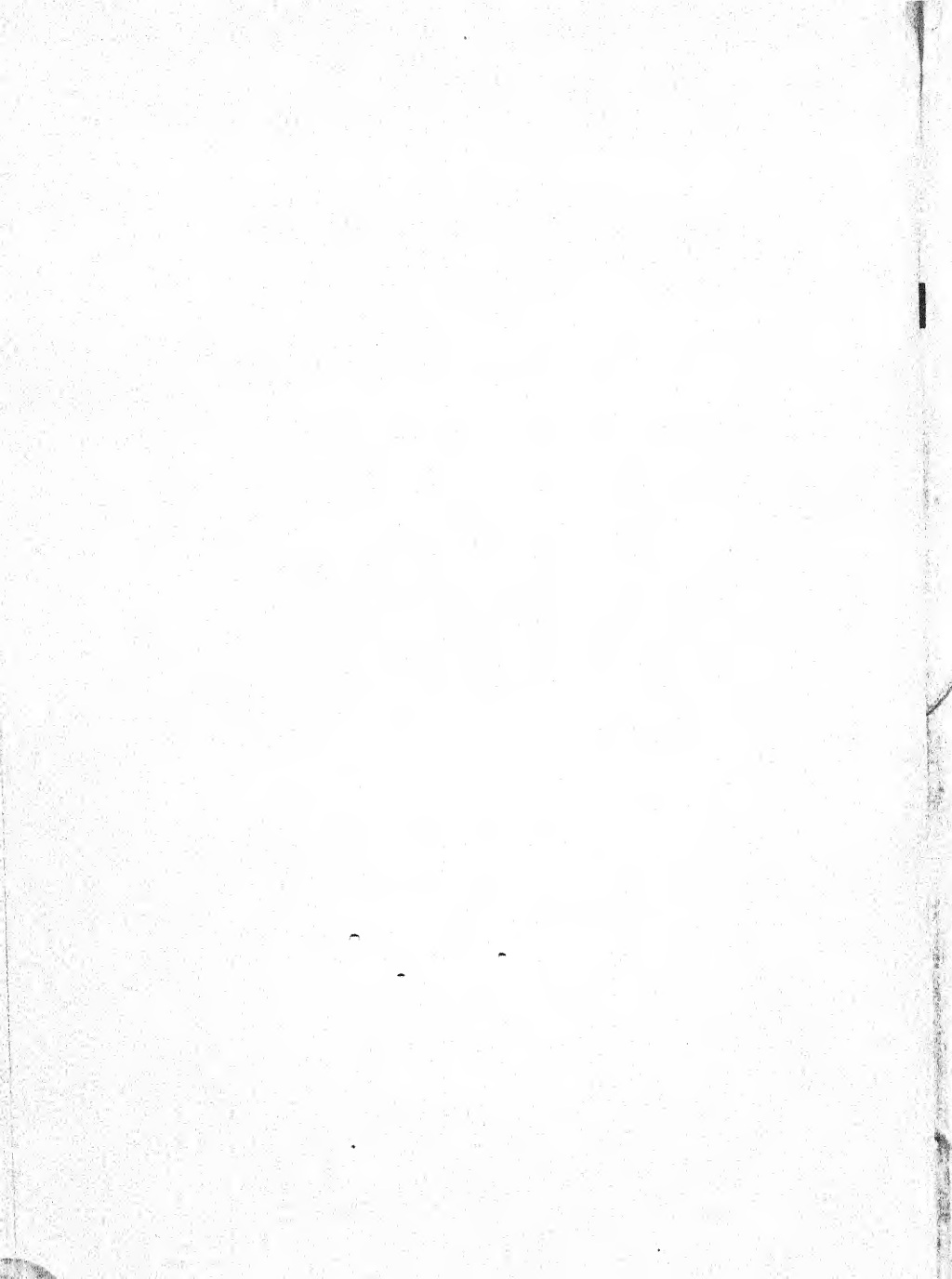
I have in mind one blood-stained veteran who was eleven years of age at the time of the Armistice in 1918, but, who, when he left the Air Force at the expiry of his Short Service Commission, when he was twenty-five years old, had three war-medals—and had never flown in England. This statement has puzzled some of the senior officers of the R.A.F., but it is true, and shows the far-spread operations of our Air Force.



PART II

The Organization of the Air Ministry

[At the end of Part II will be found a list of the Members of Air Council at the end of each Financial Year (March 31) from the first Air Council of 1918 up to March 31, 1939, together with the official position held by each Member. Following these there appear contemporary lists of the officers who held the various Commands in the R.A.F. from August 1918 till March 1939. The intervening pages are intended to explain the Organization of the Ministry and the significance of these offices. For these lists, which are valuable historical records, I am indebted to the Press Section of the Air Ministry.—C. G. G.]



CHAPTER NINE

The Organization of the Air Ministry

The Kingsway Air House—Where the Air Ministry Should Be—The Hierarchy of the Air Ministry—The Secretariat—The Dominance of the Civil Service—The Chief of the Air Staff—Operations and Intelligence—Training and Organization—Directorate of Personnel—Directorate of Equipment—R.A.F. Medical Services—Works and Buildings—The Department of Civil Aviation—Aviators' Certificates—Certificates of Airworthiness—Civil Planning—Civil Air Communications—W/T and R/T—The Meteorological Office

IN discussing the organization of the Air Ministry we have to remember that when it was in full running order under Lord Weir in the later stages of the War 1914-18 it was a colossal affair which had to administer and provide for 30,000 officers and 300,000 men. The Head Office, so to speak, was the old Hotel Cecil in the Strand, commonly known as the Hotel Bolo, as already explained. It stood where the Shell-Mex Building stands to-day.

Branches ran into several buildings in Kingsway, because it outgrew even the Hotel Cecil, which was a very big hotel. The Kingsway branches were mostly technical and produced a large crop of gentlemen in uniform whose duties were to hustle up the delivery of contracts and deal with the supplies of raw material to the contractors who were building aeroplanes and aero-motors. Also they were concerned quite considerably with scientific research, as understood by aeronautical engineers. Hence the crop of Kingsway Captains aforesaid, as they were called ironically by the mere fighting man who flew against the enemy.

When the fighting ceased the Hotel Bolo and many of the offices on the West side of Kingsway were deserted, as the

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Kingsway Captains and other officials got into plain clothes and went back to their civilian occupations.

Many office buildings in London were standing practically empty, not because the tenants that might have been were afraid of being bombed in those days, but because so many businesses had been closed down by the outbreak of war, some because their owners had joined the King's Fighting Forces, others because their businesses had fallen to pieces under them.

Consequently the Air Ministry, in search of a good home acquired, either by bargaining or by commandeering, the peculiarly hideous corner building on the East side of the South end of Kingsway. And it has been the Headquarters of the R.A.F. ever since. The name Bolo House was dropped, and it has become known familiarly as The Air House.

A few years ago there was a good deal of talk about pulling down all the buildings between the Thames Embankment and Parliament Street and West of the War Office, with the possible exception of the Royal United Service and its famous Museum. On this space was to be built an Air Ministry worthy of the Royal Air Force, which as members and supporters hope will some day be a greater force either for war or peace than either the Navy or the Army. That is where it should be.

The idea in placing the Air Ministry there would be to bring it within easy communication of the Admiralty and the War Office. There were those who suggested that when the administrative buildings of the three Services were got together in that way they should surround themselves with a fortification so that they might protect themselves against the populace, if the proletariat thought badly of the way in which the Services had conducted any major war.

Actually the suggestion was excellent. The Royal Air Force is to-day our first fighting line—either for offence or defence. In any war, as actually happened in 1914, although flying was in its infancy, the Air Force must come into contact with the

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enemy before either the Army or the Navy can do so. The Air Force is certainly worthy of a more imposing home in time of peace than that atrocious iron, concrete and glass structure in Kingsway—wherever its numerous Departments may choose to stow themselves and their documents and archives in time of war.

And there is no getting away from the fact that relations between the three Fighting Services might be considerably improved if the Heads of Departments and all their Juniors had better opportunities of meeting.

Incidentally, perhaps I may be allowed to record here my objection to calling the King's Fighting Services our "Defence Forces." According to a high authority on War, Defence is the first stage of Defeat, for it means that the initiative, that is to say the Offensive, has passed into the hands of the enemy. Offence is, as ever, the best form of Defence. And Protection is a better word than Defence.

In any case the little Air Ministry which existed in 1919 was able to house itself very comfortably in the aforesaid building in Kingsway.

With those introductory remarks let us consider the general organization or hierarchy of the Air Ministry.

At the head of everything in the "Air Force List"—not the *Royal* Air Force List, please note—is the name of the King as Chief of the Royal Air Force.

Under him come the Air Council. And as a general rule each member of the Air Council is the head of one of the Departments into which the Air Ministry is divided.

Near the end of the first section of this book is recorded the composition of the Air Council when it was reorganized because of the change of Government in February 1919. It was then a comparatively simple organization.

Although there is a popular delusion that the Fighting Services are controlled by sailors and soldiers and airmen in their respective Ministries, the interesting, though some people consider it the lamentable, fact remains that the Air Ministry,

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and consequently the Royal Air Force, is not controlled by fighting men but by Civil Servants.

Everybody who has had experience of any of the Fighting Forces knows that every Serving Officer, no matter of what rank, finds himself, at the sight of a Civil Servant, to quote Kipling's phrase, "Crawling with invidjus apprehension." The reason for that is that the Civil Servants represent the Treasury—which means the Chancellor of the Exchequer for the time being.

The Treasury holds the purse-strings and no officer in the R.A.F., or in either of the other Fighting Services for that matter, dares to expend the smallest sum on behalf of the Service, no matter how desirable such expenditure may be, without first having that expenditure approved by the Civil Servants in the Air Ministry who represent the Treasury. Only at very rare intervals does a combatant officer arrive who is willing to take the responsibility of committing the Government to an expenditure of money, no matter how much such expenditure may be for the good of his Service.

Presumably because of this the Department of the Secretary of the Air Ministry appears before all the other Departments in the Air Force List.

The work of the Secretariat proper includes everything between approving the price at which supplies are bought to refusing to pay the bill because the goods are not up to specification.

The precise hierarchy of the Civil Service side of the Air Ministry is a little difficult to understand.

In its early days the Department consisted of a Secretary, Mr. W. F. Nicholson, a Deputy Secretary and Accounting Officer, and a host of principal assistant secretaries, assistant secretaries, "principals (old style)," and merely "principals." And there were also "assistant-principals," of whom one in the early days after the war was on leave to the Silesian Administrative Commission, which had something to do with the

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partition of Silesia between Germany and Poland under the mandate of the League of Nations. That was the famous occasion on which, according to Signor Daniele Varé, formerly Italian Minister in China and Denmark, in his informative and entertaining book, *The Laughing Diplomat*, Mr. Lloyd George delivered himself at Geneva, of the famous dictum that "giving Silesia to the Poles was like giving a clock to a monkey." He evidently did not think highly of the Poles either as a commercial or mechanical people.

In the Secretariat of the Air Ministry in its early days were a number of quite interesting appointments. For example one gentleman was earmarked for legal work. Another was carried in the list as employed by the Committee of Imperial Defence on writing the Air History of the War. Another was concerned with air inventions, he was in fact secretary to the Commission on Awards to Inventors—an estimable body which made a certain number of gentlemen happy by awarding them large amounts for the alleged inventions which they had sold to the State during the War.

Then we see another who is in charge of Statistics, and yet another who is a Chartered Accountant and so in the Financial Division.

There is a Directorate of Accounts. There is also a Directorate of Contracts—which is said to be a peculiarly trying job because of the constant disputes with suppliers of all sorts, including raw materials, component parts, accessories, complete aeroplanes and complete motors and all the possible equipment of the Fighting Service.

Also in the Secretary's Department at first was the Directorate of Lands, commonly called in these days "Bricks and Buildings," whose job is to buy or commandeer land for aerodromes, to demolish old buildings, and to set up new edifices worthy of the new Royal Air Force. Since those early days this department has been transferred first to the Chief of the Air Staff and lately to the Department of the Air Member for Supply and Organization. In those early days its work con-

sisted largely in getting rid of unwanted aerodromes and buildings—in fact a house-agent's job.

On the purely Service side, first came the Department of the Chief of the Air Staff. This is actually the Active Service branch of the Air Ministry. It is the section which makes air war. The other Departments merely supply the material, just as the Secretariat supplies the money for the whole lot.

The Chief of the Air Staff is not necessarily the Officer Commanding in the Field, but he is in effect the Commander-in-Chief of the Royal Air Force. That is to say from the operational point of view his only superior is the King himself—in spite of the fact that his operations are limited, though not directed, and sometimes are not hampered, by the Cabinet.

Under the Chief of the Air Staff the first Directorate is that of Operations and Intelligence. As its name implies, this Department plans all the operations for any campaign which may be in hand, and it is also in charge of the Secret Service, or spy system, whichever one likes to call it.

This is not the place in which to discuss the work of an Intelligence Department, but I may say that it is not solely concerned with dealing with spies, whether beautiful females or the lowest sort of loafer who has a secret to sell. Much of its work consists in collecting and collating and filing and tabulating all sorts of apparently innocent bits of information, maybe pictures out of foreign papers or photographs of foreign celebrities, or even articles in foreign newspapers, which when read by somebody who has a knowledge of the subject unintentionally give away valuable information. That is why the much-abused censorship of the newspapers has to exist. An article written in all innocence may contain, quite unknown to the writer, information which would be comforting to an enemy or a potential enemy.

Also under this Department of Operations and Intelligence come the Liaison Officers with our own Dominions, and the Air Attachés who are accredited to foreign Governments and are attached to our Embassies and Legations.

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Another very important Directorate in the Department of the Chief of the Air Staff is that of Training and Organization. Naturally the system on which officers and airmen alike are trained for their various jobs must depend on the work which the Air Staff intends them to do. And they must be organized so that they can do that work efficiently.

In the first organization of the Air Ministry there was a Directorate of Personnel inside the Department of the Chief of the Air Staff. At a later date the personnel of the Air Forces had a Member of their own on the Air Council. He is commonly known as the A.M.P.—Air Member for Personnel.

In those early days also the Directorate of Equipment was in the Department of the C.A.S. This Department had to deal with the design of aeroplanes and aero-motors and the material of which they were made.

Somewhat naturally the Director of R.A.F. Medical Services came under the C.A.S., because, apart from operations in the surgical sense, the R.A.F. doctors are responsible for keeping the officers and men in a fit state to perform operations ordered, in the military sense, by the Air Staff.

Later, when the R.A.F. began to expand again, the Directorate of Works and Buildings came under the C.A.S. because the locating of aerodromes, the way in which they were made up, the design and construction of the buildings in which the men were housed, all directly or indirectly affect the warlike operations which the Air Staff were there to plan.

A curious fact about the early arrangement of the Air Ministry, as disclosed in the old Air Force List, is that the Department of the Controller-General of Civil Aviation came directly after the Department of the Chief of the Air Staff, and before the Department of the Director-General of Supply and Research. One would rather expect that the Department of Supply and Research would come before the Department of Civil Aviation. This would have seemed still more fitting because the Department of Supply and Research was concerned with both Service and Civil Aviation.

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One of the first things which the Air Ministry did after civil flying again came into being in May 1919 was to impose a system of supervision over all civil aeroplanes, and over all civil pilots. Before anybody was allowed to fly outside an aerodrome at which he was a pupil, he had to qualify for an Aviator's Certificate.

There were two classes of certificate for civil aviators, one, the "A" Licence, for a private pilot who flew for his own satisfaction, and one, the "B" Licence, for a commercial pilot who flew for hire or reward. And there was a lot of argument about what constituted flying for hire or reward. About this more may be said later when we are considering what the Air Ministry has done.

Also before any new aeroplane was allowed to fly outside the aerodrome at which it was put together for flying, the owner had to get a Certificate of Airworthiness for it from the Department of Civil Aviation. And the officials who examined the designs of the aeroplanes and calculated whether it was fit to stand the stresses which might be put upon it, were the same officials who produced similar estimations, or "guesstimations" as they were called by the ribald, for the war machines of the Royal Air Force.

These calculations were based on the known strength of the materials which were used in aeroplanes for Civil Aviation and Service flying alike, and the scientists who had to investigate the strengths of the material were part of the Department of Supply and Research.

Likewise the pilots, before they could qualify for their A or B licences, had to pass medical tests which were the same as those which R.A.F. pilots had to pass, and the same doctors examined candidates for A and B civil flying certificates as examined candidates for commissions in the Royal Air Force. Thus one sees that from the very beginning the Air Ministry had a stranglehold on Civil Aviation and civil aeroplanes of all sorts.

Incidentally I may remark that the medical tests which can-

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didates for A licences had to pass were not so severe as those for candidates for the R.A.F. but they did, and do, insure that before anybody takes an aeroplane into the air without an instructor and on his own responsibility he has reasonably good eyesight and is not likely to faint suddenly or in other ways be a danger to the community.

Here I had better record the fact that soon after the R.A.F. came into being the Air Ministry invented two new decorations, to correspond with the Distinguished Service Cross in the Navy and the Military Cross in the Army. These were the Distinguished Flying Cross and the Air Force Cross. The former was given for War flying and the other for civil flying, such as great pioneer flights, or the testing of experimental aeroplanes over a long period. Recalling the danger of flying experiments, a humourist remarked that "the D.F.C. was given for flying in the face of the enemy, whereas the A.F.C. was given for flying in the face of Providence."

The list of officials in the Department of Civil Aviation in the early days is quite interesting.

Under the Controller-General were four Controllers and a Director. There was a Controller of Planning, who, if my memory is right, was intended to work out schemes for the general development of air lines. When I say there was a Controller of Planning I mean actually that there was a Department the head of which should have been the Controller, but in fact in 1921 when the whole thing was beginning to develop there was no Controller but there were two Deputy-Controllers, one for Home Planning and one for Planning Overseas, so presumably two Deputy-Controllers equal one Controller.

Also there should have been a Controller of Information, but presumably nobody was considered suitable for such enormous responsibility so the Department of Information was run by two Senior Assistants and two Junior Assistants.

Then there was a Controller of Communications. He really existed. His job was to develop International and internal

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systems of signalling, especially radio work, both wireless-telegraphy, commonly known as W/T, and radio-telephony, commonly known as R/T. Why one should be radio and the other wireless when in fact they are both radio I have never been able to explain, except on the hypothesis that telegraphy is older than telephony and used to be called "wireless" in the early days and so the initials have been allowed to stick, largely I suspect, to save the mental trouble of discovering some handy way of getting over the difficulty of having two terms both of which have the initials R/T.

As a matter of fact the Controller of Communications in the Department of Civil Aviation had a very great deal to do with developing radio-telephony in the Air Force itself. The importance of this Department can be judged by the fact that in 1921 the Controller had two Senior assistants, six Junior assistants, four officers attached from the R.A.F., and two officers attached from the map section of the War Office.

The fourth sub-department was run by the Controller of Aerodromes and Licences. This was the Department in fact which issued the licences to civil aviators and civil aeroplanes on the word of the scientists in the Department of Supply and Research. Also it issued licences to aerodromes, for before anybody could own a patch of land and call it a "public aerodrome" he had to get the approval of the Air Ministry who then certified that it was fit to use, that is to say that the surface would not break any normal aeroplane which had a Certificate of Airworthiness, and that the approaches against the wind in various directions were such that a normal pilot could get down safely.

The last sub-Department was the Meteorological Office. This only had a Director, who is much lower in the scheme of creation than a Controller. But he had three assistant directors and ten Superintendents each of whom had quite an important little sub-Department of his own.

Actually the Meteorological Office, which was formed out of the Royal Meteorological Society, was in itself quite a com-

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plicated organization. Although it was placed under the Air Ministry it had to do with a vast number of other industries and organizations. For example it had to look after the weather forecasts for the Navy and for the Army as well as for the Air Ministry, and it had to help the Agricultural Authorities whoever they might be—although there was a legend that when the Meteorological Office wanted to be quite sure about its weather forecasts it used to ring up sundry old farmers in different parts of the British Isles and old fishermen on the sea-board and collate their opinions before issuing their own.

Actually at that particular time weather forecasting was in a fairly infantile state. We had none of those delightful weather maps which, some years later, the more intelligent papers published day by day so that one might make one's own weather forecast from the array of cyclones and anti-cyclones and isobars and pressure lines as shown on the maps. One of the minor tragedies of the War of 1939 has been that these weather maps no longer appear, partly because, if we published what we can get on our side of the map, we should be giving information to the enemy, and partly because we cannot get information from the enemy's side of the map.

Just to give an idea of the scope of the Meteorological Office here is a list of the Departments which the various Assistant Directors and Superintendents controlled:

1. Observatories.
2. Contributive Stations—volunteers who keep rain-gauges and wind-speed-measuring apparatus, and reported their observations to Head Office.
3. Forecasts—the department in which the information from the contributive stations and observatories was collated and forecasts issued.
4. Marine—presumably information from and to ships and harbours, for the benefit of the Merchant Marine.
5. Local Centres—that is to say fixed observation posts, apart from contributive stations.

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6. Army—for the Army must have good weather information if it is to get the best results out of its manœuvres.

7. Statistics—we all know what those terrible things mean.

8. Instruments—which dealt with all the barometers and higrometers, and wind-gauges and anemometers of different types, and rain-gauges.

9. Benson—that charming place on the Thames in Oxfordshire, where valuable Meteorological research is done.

10. Scotland—of course the Scots *would* have a separate station of their own.

11. British Rainfall Organization—a separate branch which included and went beyond the normal contributive stations.

12. Navy—the branch which dealt specially with Naval requirements, apart from the Mercantile Marine.

Incidentally those forecasts for shipping into which one always runs with one's radio set when one particularly wants to catch something else, are a modern development of the work of the Meteorological Office.

Last, Atmospheric Pollution—an honorary appointment in this juvenile department of the Air Ministry was one gentleman who belonged to the Advisory Committee on Atmospheric Pollution. There would naturally be much mutual interest in the observations of the Meteorological Office as such and the effect of the weather on smoke-clouds, fog, and so forth.

For many years there was an inclination in the Air Force to take the officials from the Meteorological Department, facetiously known as the Met. Blokes, rather as a joke. One of them, a skilful prognosticator of the weather, became known affectionately in the Air Minister as the Gust-Guesser, when the guessing of gusts became practically a certain forecast of gales or any other form of weather. The Department is now regarded with affection and respect by airmen and even by agriculturalists.

CHAPTER TEN

Supply and Research

Sir Edward Ellington as Director-General of S. and R.—
Designs—Airships—Armament—Instruments—Manning of
Research Departments—Supplies—The Aeronautical Inspec-
tion Department—Approved Firms

THE last Department of the Air Ministry in the early Air Force Lists—by many people it was rightly regarded as the most important after that of the Chief of the Air Staff—was that of the Director-General of Supply and Research. This included everything which had to do with the equipment of the Air Force.

Supply meant seeing that Active Service members of the Air Force got enough equipment of all sorts, from aeroplanes and motors and bombs down to sparking-plugs and cartridges.

Research meant that they got the best quality of equipment that was available considering the technical knowledge of the period. Although many of the aeroplanes, motors, guns and such things which were supplied to the Air Force twenty years ago might look ridiculous in the light of our present knowledge, anybody who has practical knowledge and vision can see that many of the things which are supplied to many Air Forces to-day are equally ludicrous.

The first Director-General of Supply and Research was Air Vice-Marshal Sir Edward Ellington, K.C.B., C.M.G., an officer of the Royal Regiment of Artillery, who had been on the Staff at the War Office in the early days when the R.F.C. was being created. He had done much in its formative period to lay down the lines on which it was to grow. After a period of Army Staff work in France he came back to build the young R.A.F. in 1918.

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The Director of Research had under him Deputy Directors of (a) Designs, which included aeroplanes and motors, (b) Airship research, of which a great deal was done round about 1920 to 1924, (c) Armament, and (d) Instruments.

That last Department is interesting because before the War 1914-18 nobody bothered much about instruments on aeroplanes—a compass to show approximately which way one was going, an altimeter to show roughly the height to which one had gone, and a revolution indicator to tell one how fast one's motor was going, were about all that one had. Then airspeed indicators, which were still approximate in their information, were added, and people thought that they were very well supplied.

Anybody who has seen the dozens of instruments which occupy the whole front of the cockpit of a modern aeroplane will find difficulty in deciding whether those who flew those early aeroplanes are exceedingly lucky to be alive, or whether all the gadgets which are hung over and inside a modern aeroplane ought not to be made automatic and put outside of the control of the pilot or the engineer who is carried on board. Their multiplicity certainly causes confusion and contributes to accidents.

Looking through the Air Force List of October 1921, picked at hazard from a long row of these interesting publications, I am interested to see that the Directorate of Research was manned almost entirely either by Serving Officers, who brought with them all their knowledge of war, and what people had needed during the War, to incite the Department to farther research, or else they were men of considerable scientific attainment, most of whom have made considerable names for themselves since then. Those of us who know them can now see how well the personnel of those Departments were chosen.

The Directorate of Aircraft Supplies, on the other hand, was manned almost entirely by civilians, and of the few Service people in it none of them was well known in the Air Force.

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The assumption is that the Heads of the Sub-Departments were chosen rather for their business experience, which would fit them for dealing with the people in the Aircraft Trade on the purely commercial and production side.

The last of the Directorates under the Director-General of Supply and Research was that of Aeronautical Inspection. This Department has been at one time or another either the most abused or the most admired Department in the Air Ministry.

It was founded before the War 1914-18 by one of my greatest friends Captain J. D. B. Fulton, R.A., one of the first Army officers to fly, which he did at his own expense. He laid down a standard of excellence which was maintained throughout the War after his death by his successor General Bagnall-Wilde. The work of the Department has been enormously expanded and its relationship with the Aircraft Industry has been steadily improved by General Bagnall-Wilde's successor Lieut.-Colonel H. W. S. Outram.

Obviously the lives of all who travel in aeroplanes, Service or Civil, depend on the thoroughness of the inspection of motors, aeroplanes, and all the small bits and pieces on which the strength and the controllability of the machines depend. If a nut or bolt at a critical point gives way the result must be a crash unless the pilot is clever or lucky enough to "get away with it" as the modern phrase has it.

During the War 1914-18 the Directorate of Aeronautical Inspection, more generally called the Aeronautical Inspection Department, and familiarly called the A.I.D., naturally expanded enormously. Whereas at the outbreak of war the total output of what liked to think of itself as the British Aircraft Industry was perhaps two or three machines a week, at the end of the war it ran into tens of thousands a year. Not only did the A.I.D. have to inspect the aeroplanes and their motors, but they had to inspect every component part, even down to nuts and bolts and washers, and pass them as fit for use. But they had to go further down than that and had to inspect the

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raw timber before it was sawn up for use in aeroplanes, and they had to inspect the raw metals before they were made into steel, aluminium or any of the various non-ferrous alloys.

Naturally enough, men could not be found who had knowledge of the needs of aeroplanes to fill all the jobs which were going. All sorts of people were put on as inspectors. Some of them were old and experienced engineers who knew what they were doing. Some were earnest young men, unfit for military service, who had had some scientific education, and worked strictly according to the book and allowed no such latitude as would be allowed by a man with knowledge.

Others were just plain trench-dodgers who wangled their way into the Department because it offered some of the most cushy jobs of the war, and those people as a rule were the most officious and most fond of exercising their little brief authority. Such people were a curse to the Aircraft Industry and a hindrance to the Supply Department, and consequently a danger to the people on Active Service. Those were the sort of people whom the people in the Trade called "Aeronautical Rejectors" instead of "Aeronautical Inspectors."

After the Armistice most of the Aeronautical Inspectors and Rejectors got themselves demobilized as quickly as they could, to get back into business. The less satisfactory members who remained were weeded out, and in a comparatively short time the A.I.D. became so efficient that the Aircraft Constructors and suppliers of all other material came to look upon it as a genuine aid.

In fact there were, and are, those who consider that the A.I.D. people help the Trade so much, and take so much responsibility off its shoulders, that they have an enervating effect on the brains and nerves of designers and constructors. The fact is indisputable that if a manufacturer can get a piece of work past the A.I.D. and anything goes wrong with it afterwards, he can always shelter behind the A.I.D. by saying that they passed it.

Of late years the Heads of the A.I.D. have done much to

alter this state of affairs by instituting a scheme of what are called Approved Firms, who do their own detail inspection and have to take direct responsibility for the quality of their products. Their inspectors are subject to a check-inspection by the local A.I.D. inspector, but in a general way the A.I.D. only inspects major products and major operations.

The result of this is entirely healthy because it has created friendly rivalry between the A.I.D. inspectors and the firms' inspectors, so nothing which is of doubtful quality is at all likely to get through.

Possibly this slightly technical dissertation may be rather out of place in an account of the organization of the Air Ministry. But as the R.A.F. is essentially a technical Service and depends for its success, in fact its very existence, on the efficiency and knowledgeableness of its technical services, this somewhat detailed description of the work and responsibility of the A.I.D. is permissible.

So far I have dealt with the various Departments into which the Air Ministry was divided. Each of those Directorates had a number of sub-departments and those again had sub-sub-departments, which in these days have so multiplied that one might add the classic phrase—"And so *ad infinitum*."

CHAPTER ELEVEN

Committees

Aerodromes—Civil Aviation—Lord Weir on Civil Aviation
—Outside Scientists—Awards to Inventors—Experimental
Establishments—Co-ordinating Contracts—Subsidies—Fire
—Medical Advisers—Meteorology—Permanent Buildings—
Whitley Councils

APART from these actual Departments, there were inside the Air Ministry a number of Committees. These are worth quoting because they give not only to the layman but probably to the vast majority of younger people in the Air Force itself some idea of the curiously varied directions in which such an organization as the Air Ministry works. Here are some of them.

1.—*The Aerodromes Committee* considered as it does to-day the suitability of aerodromes for their jobs. In those days the Committee had a good deal to do with the sale of unwanted aerodromes, lately it has been more concerned with the commandeering of suitable land for more and more aerodromes.

2.—*The Advisory Committee on Civil Aviation*. The function of that Committee is fairly obvious. Incidentally, I may remark that the Chairman was Lord Weir, the former Air Minister. I remember that just about that time, 1920-21, Civil Aviation was having a very bad time. Mr. George Holt-Thomas's gallant effort, Aircraft Travel and Transport Ltd., had collapsed, and the various air lines were struggling hard.

Lord Weir, at a big public dinner, had to speak on Civil Aviation. In that rich Glasgow accent which he maintains, or cultivates, for use on such occasions he began his speech. "There are those who believe that Civil Aviation is a lost cause. They remind me of the schoolboy who was asked in an examination where the elephant was most commonly found?

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He replied that owing to its large size the elephant was very seldom lost."

How true, as always, Lord Weir's outlook was may be judged by the enormous network of air lines which were spreading all over the world when war was declared on September 3, 1939.

3. *The Aeronautical Research Committee*.—This brought in all sorts of outside scientists and people and members of the Aircraft Trade to recommend subjects for research in the Air Ministry, and to advise in general on research work in the light of what was known to other Scientific bodies.

4. *Awards to Inventors and Patentees Committee*.—This was still kept busy largely recommending awards for things that were invented during the War 1914-18, but it also dealt with current inventions.

5. *Committee on the Future of Experimental Establishments*.—That was a purely domestic affair of the Air Ministry's. It studied the problems of the Department of Research in conjunction with financial problems.

6. *Contract Co-ordinating Committee*.—That was a matter between the Finance people at the Treasury and the Air Ministry and the Trade. It brought in representatives of the Admiralty and the War Office to see that firms which were supplying all three Fighting Services did not, in the modern slang phrase, "Swing it across" any one of them.

7. *Committee on Cross-Channel Services (Subsidies)*.—That was when four separate air lines were trying to scrape a miserable living out of running air lines to the Continent.

8. *Royal Air Force Fire Committee*.—With such inflammable things as aeroplanes and petrol all over the place this was very necessary. It brought in people from the Ministry of Transport, electrical engineers, people from the Works and Buildings Department, people from the Metropolitan Police, and others.

9. *Medical Advisory Board*.—This was by way of co-ordinating the work of the R.A.F. Medical Service with that of the other Services and also with civil practice.

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10. *Meteorological Committee*.—This brought in people from the War Office and the Colonial Office, the Board of Trade and the Royal Society, and the Ministry of Agriculture and Fisheries, the Scottish Office, and even the Royal Society of Edinburgh. As I said before, the weather bites everybody.

11. *Permanent Building Committee*.—This had to do with the beginning of putting up something like respectable houses for R.A.F. personnel, who, in spite of the beautiful new buildings which have been built from 1935 onwards on the new aerodromes all over the country, have still been living in wooden huts which were rushed up hurriedly during the War 1914-18.

12. *Whitley Council*.—This was one of those Committees which were set up in all Government Departments and in all Industries to try to bring about better feeling between masters and men. Its work covers men in the Services, including of course the lower grades of Civil Servants.

13. *Industrial Whitley Council*.—This was the same thing, only it dealt with manual labourers and not with office workers. One may note that in spite of the charming belief that all men are equal, the lower grades of office workers still have a firm belief in their superiority to the upper grades of manual workers. No doubt this fallacy will be exploded in time.

Outside of its own internal affairs the Air Ministry had and has representatives on quite a lot of inter-Departmental Committees, as for example the Imperial Education Committee; the Navy, Army and Air Force Institutes, commonly known as the NAAFI; the Air Survey Committee; the Standing Committee of Representatives of the Government and of Ex-Service Organizations; the Ordnance Committee, which deals with armament much of which is common to all three Fighting Services; the Radio Research Board; the Advisory Council to the Committee for Scientific and Industrial Research; the Shell-shock Committee; the United Service Trust; and the Wireless Telegraphy Board.

People who think that the Air Ministry's job is merely to

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buy aeroplanes and motors and their equipment from the Aircraft Industry and its auxiliary and ancillary industries, and to enlist and train officers and men, may get from the foregoing list of internal and Departmental services some idea of the scope of the work of the Air Ministry apart from the Air Force, or, to put it more colloquially, they may now see the number of pies into which the Ministry has to put its fingers, and the danger of getting those fingers badly scalded in the process.

CHAPTER TWELVE

The Organization of the Royal Air Force

Air Marshal Trenchard's Memorandum—The Problem of the R.A.F. on a Peace Basis—Jonah's Gourd—The Independent Air Force—An Air Arm for the Navy—An Air Arm for the Army—The Governing Principles of the R.A.F.—The Foundations of a Castle—The Flying Establishment of the R.A.F. in 1919—Experimental Establishments—The Cadet College—Training Schools

So far I have dealt only with the organization of the Air Ministry as it was in its most elementary form, after its affairs had been got into fairly decent order, after the complete chaos of demobilization between the date of the Armistice and the official outbreak of Peace when the lamentable Treaty of Versailles was signed. But here seems to be the proper place in which to refer to a most important document which was issued by the Air Ministry on December 13, 1919, a trifle over a year after the Armistice.

This was a Memorandum by Air Marshal Sir Hugh Trenchard, Chief of the Air Staff, outlining the permanent organization of the Royal Air Force. To the Memorandum was prefixed a Note by Mr. Winston Churchill, then Secretary of State for Air, stating that the scheme was prepared under his direction and had been approved in principle by the Cabinet.

Although the Royal Air Force had been organized as a third Fighting Service of the Realm, altogether separate from the Navy or the Army, there was still a feeling in the two Senior Services that after the War the R.A.F. should be split up and returned to the parent Services.

Sir Hugh Trenchard, who was probably the first officer of his seniority in any of the Services to understand what a separate Air Arm could do, had proved, though only in a

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tentative sort of way, with his Independent Air Force in Eastern France during 1918 the fact that air war can be waged quite independently of land war or sea war. And this, one of his first steps after getting the Air Ministry going properly, was a Memorandum to lay down definitely the principles on which the Royal Air Force should be organized.

He opens the Memorandum by saying that the problem of forming the Royal Air Force on a peace basis differed from that which confronts the older Services, because the R.A.F. was formed by the amalgamation of the R.F.C. and the R.N.A.S., and the whole Service was practically a war creation on a temporary basis. The personnel with few exceptions were enlisted for the duration of the war and put through an intensive but hurried training. Material was created in vast quantities, but it was often obsolete before it had reached the stage of bulk production.

Sir Hugh said: "The Force may in fact be compared to the prophet Jonah's gourd. The necessities of war created it in a night, but the economies of peace have to a large extent caused it to wither in a day, and we are now faced with the necessity of replacing it with a plant of deeper root. As in Nature, however, decay fosters growth, and the new plant has a fruitful soil from which to spring"—an illuminating passage which indicates the clear imagination of the mind which produced it.

Then he adds two paragraphs which are of the greatest significance to-day.

"The principle to be kept in mind in forming the framework of the Air Service is that in the future the main portion of it will consist of an Independent Force, together with Service personnel required in carrying out Aeronautical Research.

"In addition there will be a small part of it specially trained for work with the Navy, and a small part specially trained for work with the Army, these two small portions probably becoming, in the future, an Arm of the older Services.

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"It may be that the main portion, the Independent Air Force, will grow larger and larger, and become more and more the predominating factor in all types of warfare."

There you have, twenty years ago—this book was written at the end of 1939—an example of the foresight of one of the greatest men that our generation has produced. Not only was he a great Commander in the Field, but he has shown himself since to be a man of immense vision and of wide understanding. Twice he has built an Air Force out of nothing—once in 1914, when all the available aeroplanes of the R.F.C. went to France, and again after the demobilization in 1920. And then, when he had laid the foundations on which our vast Air Force of to-day has been raised, he went on half-pay as a Marshal of the R.A.F. (ranking with but after a Field-Marshal in the Army), became a Peer of the Realm and proceeded to reorganize, reconstruct, and rebuild the Metropolitan Police Force.

For years, while he was Chief of the Air Staff, Sir Hugh Trenchard, now Viscount Trenchard, had to fight against continual attacks from the Admiralty, which did its best to get the Naval side of the Air Force into its own hands. During that thin period when money for the King's Armed Forces was grudged by all Parliamentary Parties, the Air Force was too small to be split up. Sir Hugh Trenchard was determined that it should not be split until it had grown big enough and strong enough, and had acquired a powerful enough tradition of its own, to place it worthily alongside the two Senior Services.

Consequently he purposefully shelved his own forecast that the two small portions which worked with the Navy and with the Army would become Arms of the older Services, and insisted on keeping the Royal Air Force one and indivisible.

So well did he build the Service that the Fleet Air Arm was not handed over to the Navy until early in 1939, and by that time the expansion of the Royal Air Force in men and

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machines had reached such a stage that the small portion that was lopped off for the use of the Navy was hardly noticeable.

And, although there are in the R.A.F. a number of squadrons which have been specially trained to co-operate with the Army, and are, in fact, known officially as Army Co-operation Squadrons, the War Office had not, up to the declaration of war, claimed the Army Squadrons as part of the Army, although several of them have been commanded by Army officers who have been seconded to the R.A.F.

The history of the fight for the indivisibility of the Independent Air Force really belongs to the third part of this book, which is to tell what the Air Ministry has done since its formation. But this particular Memorandum of Lord Trenchard's on the organization of the R.A.F. definitely belongs to this section of the book, for on it the subsequent development of the organization of the Air Ministry and of the R.A.F. depends.

Discussing the governing principles of the R.A.F., Sir Hugh Trenchard said that he assumed that no need would arise for some years for anything in the nature of general mobilization. He was therefore able to concentrate his attention on providing for the needs of the moment so far as they could be foreseen, and on laying the foundations for a highly trained and efficient force which, though not capable of expansion in its present form, could be made so without any drastic alteration should the necessity arise in years to come.

He continues: "Broadly speaking, the principle has been to reduce Service Squadrons to the minimum considered essential for our garrisons Overseas with a very small number in the United Kingdom as a Reserve, and to concentrate the whole of the remainder of our resources on perfecting the training of officers and men."

Years afterwards, when he resigned from the office of Chief of the Air Staff, Lord Trenchard remarked to a friend that he had laid the foundations of a castle, and if nobody wanted to build anything bigger on it than a cottage it would at any

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rate be a very good cottage. Events which began in 1937, after our unhappy attempt at one-sided disarmament, followed by a panic expansion of the R.A.F., have shown again the foresight of Lord Trenchard. To-day a castle has been built on his foundations far bigger than even he visualized when he laid them.

How minute the Royal Air Force was in those days may be gathered from the table appended to Lord Trenchard's Memorandum. It shows two Squadrons at home as a "Striking Force." Two Training Wings, each with three Squadrons. One Army Co-operation Squadron. One Fleet Reconnaissance Squadron. One Flight of Ship Fighters. Half a Squadron of Torpedo machines. One Flight of Flying-boats. One Flight of Float Seaplanes. One Communication Squadron—that was the total Flying Establishment at home.

But note this. There were to be four Experimental Stations for (a) aeroplanes, (b) seaplanes, (c) torpedo machines, and (d) wireless. There was to be a Cadet College, a Navigation School, a Flying Instructor's School (the Central Flying School), an Administrative and Technical School for Officers, a Wireless and Electric Training School, a School of Photography, a School of Naval Co-operation, a Balloon School, Airship School, Training Centre for Boys (Halton), a Technical Training Centre for Men (Manston), an R.A.F. Depot and Non-technical Training Centre for Men (Uxbridge). There were to be two Aeroplane Repair Depots, one Mechanical Transport Depot, and three Stores Depots. And there was to be one Airship Station.

That was a fine foundation on which to rebuild the Royal Air Force, there was plenty of organization for training. But think of the mentality of the politicians, or so-called statesmen who, even after what was supposed to be a war to end war, cut down the expenditure on the Air Force to an extent which made such economy on the active service units necessary.

The Establishment Overseas was a trifle more generous but still hopelessly inadequate. It was thus. India: eight

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Squadrons, one Depot. Egypt: seven Squadrons, one Depot. Mesopotamia (not yet called 'Iraq): three Squadrons, one Depot. Malta: one Flight of seaplanes. Alexandria: one Flight of seaplanes. Mediterranean: one Flight of float seaplanes on carriers.

That gives one a fair idea of the organization of the R.A.F. from which the present colossal Service has been built up.

Those who are interested in pursuing this subject farther will find the Memorandum published in full in the issue of *The Aeroplane* newspaper dated December 17, 1919. It can be found in the library of the Royal Aeronautical Society, at 4 Hamilton Place, London, W.1, or possibly in the Royal Aero Club, 199 Piccadilly. Those who do not happen to be members of either organization will surely find that the officials of the Society or the Club will be pleased to let them inspect the document.

CHAPTER THIRTEEN

Forward Steps in Organization

Expanding Civil Aviation—General Brancker as Director—
An Air Member for Personnel—The Directorate of Personal
Services—The Directorate of Training—The Directorate of
Equipment—The Directorate of Technical Development—
Ad hoc Research—*Basic* Research—Civil Air Accidents

IN June 1922 various important changes were made in the organization of the Air Ministry. The Department of Civil Aviation, which in 1921 had been under Sir Frederick Sykes as Controller-General, with a seat on the Air Council, became a Directorate in the Department of the Under-Secretary of State for Air, at that time the Right Honourable Lord Gorell, C.B.E., M.C.

Although a Director is much lower in the scheme of official creation than a Controller-General, the Director of Civil Aviation newly appointed was Major-General Sir W. Sefton Brancker, K.C.B., A.F.C., an officer who had proved himself to have unusual ability in Staff work before and during the War. After the War he, and Brig.-General Francis Festing, who had been Sir Hugh Trenchard's Chief of Personnel in France, had joined Mr. Holt-Thomas in his Civil Aviation schemes. And after that failure they both joined the Department of Civil Aviation.

Sir Sefton Brancker was notable for his fondness for cutting official knots rather than undoing them. And he was the right man for Civil Aviation at that time. But his work belongs more to the third section of this book.

Another interesting change was the placing of the Meteorological Office in the Department of the Secretary of the Air Ministry instead of in the Department of Research.

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A new Department entirely was created, that of the Air Member for Personnel. The first member of the Air Council for Personnel was Air Vice-Marshal Oliver Swann, C.B.E., one of the Naval Officers who had been at Barrow-in-Furness on the first airship work with Admiral Sueter. Incidentally he was the first person to take a seaplane off British water. He was later knighted. In his Department was a Deputy-Directorate of Personnel and a Deputy-Directorate of Organization. One presumably dealt with the acquiring of personnel and the other with organizing them when acquired.

In this Department also was the Directorate of R.A.F. Medical Services which before, like the Directorate of Personnel, had been inside the Department of the Chief of the Air Staff. Thus the composition of the Air Council was altered by the inclusion of the Air Member for Personnel and the exclusion of the Chief of the Department for Civil Aviation.

More changes were made in 1924, when the basic scheme for expansion, laid down by Sir Samuel Hoare, Secretary of State for Air, and by Sir Hugh Trenchard, began to take shape. The Deputy Chief of the Air Staff, at that time Air Commodore J. N. Steele, C.B.E., C.M.G., an officer who had joined the R.N.A.S. from the Navy when already a Post-Captain, was made an additional member of the Air Council.

In the Department of the Air Member for Personnel a Directorate of Personal Services was created, and a Deputy Directorate of Manning. Also the Training Establishment was put into the Personnel Department under a Director of Training.

The Department of the Air Member for Supply and Research was also increased by the addition of a Directorate of Equipment, which dealt with all supplies.

A further development was the appointment of a Director of Technical Development, as distinct from the Director of

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Scientific Research. That is to say that the Research Department hunted for things, and the Department of Technical Development developed them into a state of being technically useful.

This was a much greater step forward than might be imagined. Finding a thing which may be useful and making it useful are two entirely different things.

Research itself is of two kinds. There is what is called *ad hoc* research, that is seeking to find some mechanical or scientific method of producing or doing something which is obviously needed, such for example as aeroplanes which will land slowly and not catch fire if they happen to have a slight accident when landing. The other kind of research, which is called *basic* research, is more or less blind seeking amid masses of scientific material for something which may be useful. The difference has been put briefly in the saying that *ad hoc* research is looking for a needle in a haystack when you know that there is a needle there, and basic research is turning over innumerable haystacks on the off chance that one may come across a needle.

The Americans, always intelligent and commercial, have specialized on *ad hoc* research in Aviation, which is why they have gone so far ahead of us in commercial Aviation and in certain lines in the technical development of war machines. And yet they constantly pay tribute to the valuable results that have been achieved at vast cost of time and money by our methods of basic research.

Thus one may see that the creation of a Directorate of Technical Development to make use of the things which had been more or less blindly discovered by the Department of Scientific Research was a definite step forward in the organization of the Air Ministry.

While these changes were going on in the Service Departments—which should more properly be called the Military Departments, but for the fact that people will insist on thinking that anything military must pertain to the Army and there-

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fore cannot be the affair of the Navy or the Air Force—changes were going on inside the Directorate of Civil Aviation. When Sir Sefton Brancker was first appointed he had a Senior Assistant and a Medical Adviser. The job of the latter was to see that pilots to whom a commercial licence was granted were fit to fly and to carry passengers for hire or reward. He also had a Department for Information and Planning, and a Department of Aerodromes and Lighting.

By 1923 the Departments began to branch out. In the Department of the Director of Civil Aviation itself was an Inspector of Accidents who had two Assistants. This became a very important Department of the Air Ministry because the duty of the Inspector of Accidents and his Assistants was to inspect and report upon Air Force accidents as well as accidents in Civil Aviation. Much information was gained, and the officials concerned must, as the result of investigating accidents for some sixteen or seventeen years, have gained wide knowledge of why aeroplanes come to grief.

Unfortunately that Sub-Department has never done as much for the development of safe flying as it might have done if its officials had been given a free hand, or if some special law had been passed which would allow the publication of their reports.

In the old days before the War 1914-18 the Aero Club, not yet Royal, had an Accidents Committee which held an inquest into any serious accident which happened and published its findings. The Accidents Sub-Department in the Air Ministry has never published its results. One of the officials, years ago, told me that the reason was that, although in most cases they were certain in their own minds of the causes of the accidents they did not feel that they should publish those, because if they did happen to be wrong they might injure some innocent aircraft constructor by blaming his product for an accident without having incontrovertible legal evidence that he was to blame.

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That seems a weakness in the organization. A better scheme would be to publish information about all possible causes of an accident without specifically pointing to one, for then each of these possible causes would indicate something to be avoided in the future.

CHAPTER FOURTEEN

The Air Members

A.M.P., A.M.S.R., D.D.P., D.D.O., D.M.S., D. of R.,
D.D.D., D.D.A., D.D.I., D.A.S., D.A.I., D. of E., Con-
trollerates—Rebuilding the Air Force—The Year of Resurrec-
tion—Labour's Foresight—Sir Philip Sassoon as U.S. of S.—
Sir Philip as A.M.P.—Sir Geoffrey Salmond as A.M.S.R.—
Technical Development—The Revival of Airships—Equip-
ment and Stores

QUITE an important change was made in the scheme of the Air Ministry in 1922 when the Members of the Air Council who were Serving Officers in the Air Force became known officially as respectively the Air Member for Personnel and the Air Member for Supply and Research. These titles were abbreviated naturally into A.M.P. and A.M.S.R.

The title Air Member for this or that is not self-explanatory. Since that time the constitution of the Air Council has been altered considerably and there are various other Air Members of the Air Council, besides the Secretary of State for Air, the Under-Secretary of State for Air, the Chief of the Air Staff, the Secretary of the Air Ministry, and more lately several others. The words "Air Member," or the abbreviation A.M., therefore indicate that the holder of the title is a Serving Officer who is in that particular post in the Air Ministry and is likely to be appointed to one of the Higher Commands on the combatant side of the R.A.F.

In the various Departments under the Air Members of the Air Council there were then a variety of Directors, and Deputy-Directors, and naturally these officials have multiplied considerably since the great expansion began in 1937. Those who work in the Air Ministry and many of those who work with the Air Ministry know by heart the various initials which

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indicate the various officials. But in those early days we were content with a D.D.P. who was Deputy-Director of Personnel, D.D.O. who was Deputy-Director of Organization, and a D.M.S. who was Director of Medical Services in the Department of the A.M.P.

In the Department of the Air Member for Supply and Research (A.M.S.R.), there was a D. of R., Director of Research; a D.D.D., Deputy-Director of Designs; a D.D.A., Deputy-Director of Armament; and a D.D.I., Deputy-Director of Instruments. There was also a D.A.S., Director of Aircraft Supplies, and a D.A.I., Director of Aeronautical Inspection. Also there was a D. of E., Director of Equipment.

In Government Offices there is some difference between a Director and a Controller, and likewise between a Director-General and Controller-General. The difference, so far as I can discover, is that a Director or Director-General reports to the Chief of his particular Department, whereas a Controller-General reports direct to the Minister who controls all the Departments in that particular Service.

When one is talking of the Sub-Department itself one finds no difficulty in referring to it as the Directorate of so and so, but when the Head of the Department happens to be a Controller somehow or another calling it the Controllorate of so and so is not so easy. Nevertheless, that is correct official English.

The year 1923 was notable in the history of the Air Ministry because it marked the beginning of the steps by Lieut.-Colonel the Right Hon. Sir Samuel J. G. Hoare, Bart., C.M.G., M.C., who had become Secretary of State for Air under the new Coalition Government, and Air Chief Marshal Sir Hugh M. Trenchard, Bart., K.C.B., D.S.O., A.D.C. to the King, to lay the foundation for the rebuilding of the Air Force. The year 1923 might, in fact, be called the Year of Resurrection. What they did belongs to the third part of this book, but with the coming of Sir Samuel Hoare some considerable alterations were made in the Air Ministry itself.

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To begin with, the Directorate of Civil Aviation under Major-General Sir Sefton Brancker became more fully organized. Officials who had previously been merely Senior Assistants or Junior Assistants were given definite Departments. For example an Inspector of Accidents was appointed with two Assistant Inspectors under him. An R.A.F. Officer was attached to the Department for Airship work. There was a Deputy Director of Air Transport to look after the various air lines which were then operating, instead of a Controller of Information and Planning.

In 1924 we had another change of Government and Brigadier-General Thomson, C.B., C.B.E., D.S.O., D.S.C., *p.h.a.*, an Officer of the Royal Regiment of Artillery who resigned from the Army and became a Labour Member of Parliament after the War, was elevated to the Peerage and appointed Secretary of State for Air. Mr. William Leach, M.P., another Labour Member, was appointed Under-Secretary for Air and Vice-President of the Air Council.

There is interest in noting that under the Labour Government nothing was done to hamper the rebuilding of the Royal Air Force which Sir Samuel Hoare and Sir Hugh Trenchard had begun the year before. When we remember the avowed pacifism of the Labour Party and the cry of all Parties that the War 1914-18 was a war to end war, the foresight of the Labour Government in allowing the Air Force to expand reasonably, in view of the bad times financially, deserves to be noticed.

That Labour Government was short-lived and by 1925 Sir Samuel Hoare was back in office. With him came Major Sir Phillip A. G. E. Sassoon, Bart., C.B.E., C.M.G., M.P., as Under-Secretary for Air. This was the first appearance at the Air Ministry of a man who for many years had great influence in the Air Force and in air affairs generally. Reference will be made to his work in the third part of this book.

Another interesting appointment at this time was that of Air Vice-Marshal Sir Philip W. Game, K.C.B., D.S.O., D.Sc.,

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as Air Member for Personnel. At the time of writing this book, in November 1939, Sir Philip was Commissioner for the Metropolitan Police, which post he has held for several years.

He was not an aviator. There was a legend about his coming into the R.F.C., from which he joined the R.A.F., which is worth recording whether it be literally true or not. Some time in 1917 when squadrons and pilots were going out of England to the R.F.C. in France in large quantities, General Trenchard realized that the Staff work of such a suddenly increased Force was outside the experience of any of his own Staff, so he sent across from his Headquarters at Hesdin to General Sir Douglas Haig's Headquarters at Montreuil to ask him whether he could spare him a first-class Staff Officer. Promptly Major Philip Game arrived bearing a note from General Haig: "Here is my best Staff Officer. Do what you like with him." Nobody disputed Sir Douglas Haig's description and Sir Philip Game proved to be particularly valuable at this particular time when the R.A.F. was just beginning to grow again and the work, of the Department of the A.M.P. needed Staff organization.

The Air Member for Supply and Research at this period was Air Vice-Marshal Sir W. Geoffrey H. Salmond, K.C.M.G., C.B., D.S.O., *p.s.c.*, who in 1922 succeeded Sir Edward Ellington as A.M.S.R. Sir Geoffrey who had commanded the R.A.F. in the Middle East and had organized the brilliant air support of General Allenby's last great attack on the Turkish Army in Palestine, was the brother of Sir John Salmond, who was commanding the R.A.F. in France throughout 1918. He was an Artillery Officer before the War and so had the advantage of the excellent technical training which was given at the Royal Military Academy at Woolwich. He was also one of the pre-War pilots of the R.F.C., and so was particularly suited to control a section of the Technical Department.

By this time the Department of the Air Member for Personnel had been expanding considerably. Instead of consisting only of three Sub-Departments, namely Personnel,

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Organization, and Medical Services, the first two under Deputy-Directors, it now consisted of four Departments, the Directorate of Personal Services, the Deputy-Directorate of Supplies, the Directorate of Training, and the Directorate of Medical Services.

An interesting appointment in the Directorate of Training was that of Educational Adviser, whose job was to look after the general education of the men who enlisted as air mechanics. This side of the Air Force was very much increased later on, and latterly any man in the Air Force has opportunities for educating himself in almost any trade or profession to which he took a fancy. The training of the men when they came into the Air Force naturally produced first-class mechanics for aeroplane or aero-engine work and for radio and various other professions directly concerned with Aviation, but the Education Department arranged for a much wider scope of education both technical and literary.

In 1924 a new Directorate was created in the Department of the Air Member of Supply and Research. That was the Directorate of Technical Development. Hitherto Technical Development had been more or less left to the Directorate of Research. The general idea of the new Directorate was to take things which had been discovered by scientific research and develop them technically until they were fit to become standard articles of equipment in the R.A.F. This Department covered everything of a technical nature from the development of an improved sparking plug right up to the development of a complete multi-motor bomber.

Another Directorate of this period was that of Airship Development. At the end of the War 1914-18 we had a number of reasonably good airships which were used for patrols and searching for submarines. We never used them for raids on enemy country but they did valuable work at sea. In its proper place I propose to say something about Airship Development. Like everything else in the Air Force the airships were scrapped at the end of the War and the new

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appointment was an intelligent effort by Lord Thomson to revive the building of airships, in rivalry with the great progress which was being made by the Zeppelin Company in Germany, thanks to encouragement from the United States, which had prevented the total destruction of the Zeppelin Works at Friedrichshafen by the Inter-Allied Disarmament Committee. But that is another story.

There were few notable alterations in the organization of the Air Ministry during the next few years. In spite of the disaster to the R.101 the Directorate of Airship Development still existed under the A.M.S.R. The story of the Air Ministry's airship operations after the War will be told in its proper place.

The Directorate of Equipment divided itself in 1930 into a Deputy-Directorate of Equipment and a Deputy-Directorate of Stores. Eventually the Stores Department developed into an enormous organization of its own. This Deputy-Directorate of Equipment later split itself into three and became a Deputy-Directorate of Equipment (Aircraft), a Deputy-Directorate of Equipment (General), and a Deputy-Directorate of Equipment (Supply and Movement).

CHAPTER FIFTEEN

Multiplying Departments

Lord Swinton, Air Minister—Research and Development—Supply and Organization—D.T.D., D.S.R., D.D.T.D., D.D.S.R.—The Directorate of Aeronautical Production—Sir Francis Sheldermine, Director-General of Civil Aviation—Changes in the Department of Civil Aviation—Sir Kingsley Wood, Air Minister, and Captain Balfour, Under-Secretary of State for Air—Sir Cyril Newall, C.A.S.—Mr. Lemon, Director-General of Production and Member of Air Council—Mr. Hildred, Deputy-Director-General of Civil Aviation—Bowdlerizing the Air Force List—Lieut.-Colonel Outram, Director of Aeroplane Production—Group Captain Sowrey as Director of Aeronautical Inspection—Air Raids Precautions, Air Ministry—The Growth of the Air Force

In 1934 a major change took place in the organization of the Air Ministry. The Department of the Air Member for Supply and Research was split in two. Air Marshal Sir Hugh C. T. Dowding, K.C.B., C.M.G., *p.s.c.*, was appointed Air Member for Research and Development. And Air Marshal Sir Cyril L. N. Newall, K.C.B., C.M.G., C.B.E., A.M., was appointed Air Member for Supply and Organization. Thus the Air Ministry acquired an A.M.R.D. and an A.M.S.O. instead of merely an A.M.S.R.

The internal organization of the two new Departments is interesting. Under the A.M.R.D. there was a Director of Technical Development, Air Commodore R. H. Verney, O.B.E., and a Director of Scientific Research, Mr. H. E. Wimperis, C.B., C.B.E., M.A., F.R.Ae.S., M.I.E.E., who had held that place under the A.M.S.R. for several years, and who was and is recognized as one of the leading scientific authorities in Aeronautics.

Under the D.T.D. was a Deputy-Director of Technical

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Development, D.D.T.D., and under the D.S.R. there was a Deputy-Director of Scientific Research under whom again came an Assistant Director (Aircraft), an Assistant Director (Engines), an Assistant Director (Armament), and an Assistant Director (Instruments).

The Directorate of Aeronautical Inspection under Lieut.-Colonel H. W. S. Outram, C.B.E., A.R.S.M., A.F.R.Ae.S., A.M.I.E.E., M.I.E.I., remained under the A.M.R.D., as did the Deputy-Directorate of Repair and Maintenance. One might reasonably have thought that the A.I.D., and Repair and Maintenance, belonged rather to Supply and Organization than to Research and Technical Development.

Under the A.M.S.O. came the Directorate of Organization, the Directorate of Equipment, the Deputy-Directorate of Equipment (General), and the Deputy-Directorate of Equipment (Supply and Movement). Also the Directorate of Works and Buildings under Colonel J. F. Turner, D.S.O., came under the A.M.S.O. This last Department might seem to be more appropriate where it had been originally, direct under the Chief of the Air Staff.

Lord Londonderry was superseded in 1935 by the Right Honourable Sir Philip Cunliffe Lister, G.B.E., M.C., M.P. He chose as his private secretary Mr. C. J. Galpin, D.S.O., formerly Major R.A.F., who had won his D.S.O. for bringing down a Zeppelin over the North Sea.

Sir Philip Sassoon remained for a while as Under-Secretary of State for Air. Sir Christopher Bullock, K.C.B., C.B.E., who had become Secretary of the Air Ministry in succession to Sir Walter Nicholson in 1931 and was knighted in 1932, remained in that office.

In the Department of Civil Aviation considerable changes were made. The Head of the Department, Lieut.-Colonel F. C. Shelmerdine, was promoted from Director of Civil Aviation to Director-General of Civil Aviation.

A new post, that of Operational Adviser, was created, and Mr. Ivor H. McClure, D.S.O. (Major in the Army), was

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chosen for the position. For some years he had been a keen flyer and an owner-pilot, and he had created the Aviation Department of the Automobile Association and raised it to a high pitch of efficiency for the benefit of air tourists.

The creation of the new Departments of Research and Development and of Supply and Organization naturally necessitated a re-arrangement of all the subsidiary Departments.

The Department of Chief of the Air Staff included the Directorate of Operations and Intelligence, the Directorate of Staff Duties, and a Signals Branch.

The Department of the Air Member for Personnel included the Directorate of Postings, the Directorate of Personal Services, the Directorate of Training, the Education Branch, and the Directorate of R.A.F. Medical Services, which included the Nursing Service.

The Department of the Air Member for Research and Development included the Directorate of Technical Development and the Directorate of Scientific Research, the Directorate of Aeronautical Inspection, and the Deputy-Directorate of Repair and Maintenance.

The Department of the Air Member for Supply and Organization contained the Directorate of Organization, the Directorate of Equipment (with the Deputy-Directorates of Aircraft, General, and Supply and Movements), and the Directorate of Works and Buildings.

In 1936 the Air Minister, Sir Philip Cunliffe-Lister, had been promoted to be Viscount Swinton. Sir Philip Sassoon still remained Under-Secretary of State for Air. Air Vice-Marshal Wilfrid R. Freeman, C.B.E., D.S.O., M.C., *p.s.a.*, had taken over the Department of Research and Development from Air Marshal Sir Hugh Dowding, and Colonel Sir Donald Banks, K.C.B., D.S.O., M.C., from the Post Office, had been appointed Secretary of the Air Ministry in place of Sir Christopher Bullock.

The events connected with this change in the Secretaryship are told in their chronological place in the third part of this

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book. Ordinarily Mr. J. S. Ross, C.B.E., would have succeeded to the Secretaryship but he was so near the age for compulsory retirement that a younger official was appointed from another Department and a knighthood was given to Mr. Ross, presumably by way of compensation. Actually another change was made in the Secretaryship shortly afterwards.

In the Department of the Chief of the Air Staff the only alteration was the up-grading of the Signals Branch to be the Directorate of Signals. And the personnel of the Branch was increased.

No changes were made in the Department of the Air Member for Personnel.

In the Department of the Air Member for Supply and Organization the Directorate of Aeronautical Production was created. Lieut.-Colonel H. A. P. Disney, who had served on the production side of the Air Ministry during the War 1914-18, was made Director. Four retired officers of the R.A.F., all of whom had had experience on the production side during the last war, were brought into the Department and a number of civilians who had been connected more or less with the Aircraft Trade.

Presumably by way of establishing a new order of precedence the Department of the Director-General of Civil Aviation, who had been knighted, and was now Lieut.-Colonel Sir Francis C. Shelmerdine, C.I.E., O.B.E., was now placed in the Air Force List after the aforementioned Department instead of coming immediately after the Air Minister's Department as hitherto.

Mr. Galpin, who had been private secretary to the Air Minister, was appointed a Deputy-Director, to rank with but after Mr. J. D. Gibson. They took the place of Mr. S. G. L. Bertram, who had hitherto been Deputy-Director but was now given a special appointment.

In 1937 the increases continued. Lord Swinton was still Secretary of State for Air. Sir Philip Sassoon in a general

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re-shuffle of posts during the year had been succeeded by Lieut.-Colonel A. J. Muirhead, M.C., M.P.

Air Vice-Marshal W. G. S. Mitchell, C.B., C.B.E., D.S.O., M.C., A.F.C., succeeded Sir Frederick Bowhill as Air Member for Personnel.

In the Department of the Air Member for Research and Development the Deputy-Directorate of Repair and Maintenance was up-graded to be a Directorate, and as usual when such up-grading takes place the personnel was increased.

In the Department of the Director-General of Civil Aviation important changes took place. Mr. J. D. Gibson was appointed Director of Home Civil Aviation, Mr. C. J. Galpin was appointed Director of Overseas Civil Aviation, and Mr. Ivor McClure was appointed Director of Operational Services and Intelligence.

In 1938 Viscount Swinton had been succeeded as Secretary of State for Air by the Right Honourable Sir Kingsley Wood, M.P., who had been Postmaster-General, Minister of Health, and had held various other offices in all of which he had earned the reputation of being a man who got things done.

His Under-Secretary of State for Air was Captain Harold Balfour, M.C., M.P., who had distinguished himself as a fighting pilot during the war and had kept in flying practice ever since. He nursed his constituency, the Isle of Thanet, largely by air, and had become concerned with various businesses in the Aircraft Trade. He was interested with Lord Cowdray and Mr. Clive Pearson in Whitehall Securities Ltd., and brought that concern into Spartan Aircraft Ltd. Through it they became interested in Spartan Air Lines and in Saunders-Roe Ltd. of Cowes. The result was that he had a good acquaintance with aircraft manufacture and aircraft operation besides his own knowledge as a pilot. Before taking office he had made a name for himself as a useful constructive critic of the Air Ministry.

Marshal of the R.A.F., Sir Edward Ellington was succeeded in 1938 as Chief of the Air Staff by Air Chief Marshal Sir Cyril

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Newall, who was succeeded as Air Member for Supply and Organization by Air Vice-Marshal W. L. Welsh, C.B., D.S.C., A.F.C., formerly an officer in the Royal Naval Air Service, and formerly an officer in the Royal Naval Reserve.

Sir James Ross, K.B.E., C.B.E., who had been Deputy Secretary of the Air Ministry, was succeeded by Sir Arthur W. Street, K.B.E., C.B., C.M.G., C.I.E., M.C., as First Deputy-Under-Secretary, and by Mr. A. H. Self, C.B., as Second Deputy-Under-Secretary.

In the Department of the Chief of the Air Staff the Directorate of Operations and Intelligence was sub-divided into a Deputy-Directorate of Plans, a Deputy-Directorate of Operations, a Deputy-Directorate of Operational Requirements, and a Deputy-Directorate of Intelligence. The Directorate of Staff Duties and the Directorate of Signals remained as before.

In the Department of the Director-General of Civil Aviation a new Directorate of Civil Aviation Finance was formed with Mr. J. H. Vance as Director. A new Directorate of Civil Research and Production was also formed. The Director was Mr. C. J. Stewart, O.B.E., F.R.Ae.S., M.I.M.E., M.I.A.E.

Also the Directorate of Operational Services and Intelligence was enlarged by the appointment of nine Operations Officers besides the two of the previous year.

In 1939 an alteration was made in the Constitution of the Air Council which was a revolution in principle. Mr. E. J. H. Lemon, O.B.E., M.I.Mech.E., M.Inst.T., was borrowed from the Midland Railway and appointed Director-General of Production. Otherwise the Air Council remained the same.

The organization of the Department of the Chief of the Air Staff and of the Air Member for Personnel remained as before. But the Department of the Air Member for Research and Development (A.M.R.D.) was re-organized. Henceforth it was known as the Department of the Air Member for Development and Production (A.M.D.P.). It still contained the joint Directorate of Research and Development, that is to say the Departments of the Directors of Technical Develop-

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ment, Scientific Research, Armament Development, and Communication Development.

In the Department of the Air Member of Supply and Organization a new Directorate of Volunteer Reserve Expansion was created and Air Commodore C. W. H. Pulford, O.B.E., A.F.C., *i.d.c.*, *p.s.a.*, was appointed Director.

In the Department of Director-General of Civil Aviation an important appointment in the earlier part of 1938 was that of Mr. W. P. Hildred, O.B.E., from the Treasury, to be Deputy Director-General of Civil Aviation.

Up to the end of 1938 the Air Force List, which was published once a month, contained not only lists of the squadrons and the other units of the Royal Air Force and the officer personnel appointed to each, but the name and address of the station at which each unit lived. In 1939 publication of the addresses of squadrons ceased. The addresses of the various Commands and of Groups at home and abroad were published, together with the names of their Commanding Officers. But no indication was given of the actual strength of any Command or Group at home.

The numbers of the squadrons in the various Commands overseas was given but no other information. The numbers, names and addresses of the Auxiliary Air Force were published but no information about their personnel.

The bulk of the Air Force List in 1939 up to the declaration of war consisted of a gradation list of the officers in order of seniority, and an alphabetical list of all ranks.

In June 1939 Air Vice-Marshal C. F. A. Portal, C.B., D.S.O., M.C., succeeded Air Marshal Sir William Mitchell as Air Member for Personnel, and Sir Arthur Street succeeded Colonel Sir Donald Banks as Permanent Under-Secretary of State for Air.

Various changes in organization in the Department of the Chief of the Air Staff had taken place. Operations and Intelligence were placed directly under the Deputy-Chief of the Air Staff, Air Vice-Marshal R. E. C. Peirse, C.B., D.S.O.,

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A.F.C., *i.d.c.*, *p.s.a.* Staff Duties, Signals, Operational Requirements were placed under the Assistant Chief of the Air Staff, Air Vice-Marshal W. Sholto Douglas, M.C., D.F.C., *i.d.c.*, *p.s.a.*

In the Department of the Air Member for Development and Production considerable alterations were also made. Directly under Sir Wilfrid Freeman, A.M.D.P., came Mr. E. J. H. Lemon as Director-General of Production. Then came Air Vice-Marshal A. W. Tedder, C.B., *i.d.c.*, Director-General of Research and Development. Then Mr. J. F. Buchanan, C.B.E., who was one of the earliest of the civil technical officials in the Air Ministry, appears as Deputy-Director-General of Production, and Mr. E. F. Cliff was appointed as Administrative Officer to the Director-General of Production. Group Captain R. D. Mansell, O.B.E., appears as Chief Overseer of Production and Wing Commander C. B. Wincott as Assistant Chief Overseer.

In the Directorate-General of Research and Development the Director of Technical Development was Air Vice-Marshal Roderick M. Hill, M.C., A.F.C., *p.s.a.* The Director of Scientific Research was Mr. D. R. Pye, C.B., M.A., Sc.D., F.R.S., M.I.Mech.E., F.R.Ae.S. The Director of Armament Development was Group Captain G. E. A. Baker, M.C., *i.d.c.*, *p.s.a.* And the Director of Communications Development was Mr. R. A. Watson Watt.

The Directorate of Repair and Maintenance, under Air Commodore Sir Christopher J. Q. Brand, K.B.E., D.S.O., D.F.C., still remained, for some odd reason, under the Directorate-General of Research and Development. One can hardly regard Repair or Maintenance as either Research or Development. So long as things are merely repaired and maintained they must surely represent the extreme *status quo ante*.

Important alterations were made by establishing a Directorate-General of Production. Lieut.-Colonel H. W. S. Outram, C.B.E., A.R.S.M., F.R.Ae.S., A.M.I.E.E., M.I.E.I., who had spent his life since the early days of the War 1914-18 in

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building up the Aeronautical Inspection Department until it had become the envy of the Air Forces of the World, was appointed Director of Aeroplane Production, and Captain L. T. G. Mansell, A.M.I.C.E., A.M.I.Mech.E., A.F.R.Ae.S., who had been his right-hand man in the A.I.D., was appointed Deputy-Director. He imported into the Department several men who had been well known in the Aircraft Industry.

Major G. P. Bulman, O.B.E., B.Sc., F.R.Ae.S., who had been in charge of engines at the Air Ministry for several years, was appointed Director of Engine Production.

Mr. H. Russell was appointed Director of Sub-Contracting. Lieut.-Colonel H. A. P. Disney who had started the whole Production Department was appointed Director of Armament and Equipment Production.

Mr. C. E. Walker was appointed Director of Material Production.

Mr. T. S. Smith, B.Sc., Dipl.R.T.C., A.M.I.Mech.E., was appointed Director of Statistics and Planning.

Mr. F. W. Musson, A.F.C., B.A., A.F.R.Ae.S., who was also one of the earliest Civil Servants in the Air Ministry, and had passed through a number of Departments, was made Director of Planning of War Production.

Mr. A. R. Cooper, M.I.C.E., M.I.E.E., was made Director of Air Ministry Factories.

Group Captain John Sowrey, A.F.C., R.A.F.(ret.), was appointed Director of Aeronautical Inspection in succession to Lieut.-Colonel Outram.

In the Department of the Air Member for Supply and Organization the Directorate of Equipment was split up into four Directorates but the function of each was not specified as in previous Air Force Lists.

An entirely new Sub-Department was created at the Air Ministry in 1939. This was known as A.R.P.A.M. Major C. J. Galpin, D.S.O., was transferred from the Directorate of Overseas Civil Aviation as Assistant Secretary of the

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A.R.P.A.M. and Major O. G. G. Villiers, D.S.O., also went from the Department of Civil Aviation to the A.R.P.A.M.

Mr. W. W. Burkett, O.B.E., M.C., was appointed Director of Overseas Civil Aviation.

The foregoing facts are taken direct from the Air Force Lists of the past twenty years.

Some idea of the growth of the Air Force may be gathered from the following facts.

At the beginning of 1919, that is to say at the end of the War 1914-18, the Air Force consisted of roughly 30,000 officers and 300,000 men.

The Index of the Air Force List of 1921, which contains the names of all officers and Air Ministry officials in alphabetical order, consists of twenty-three pages containing on an average about 150 names per page. That is to say approximately 3,300 names.

The Index to the Air Force List of March 1929, when the R.A.F. was beginning to grow, contained fifty-six pages of about 155 names each, which, allowing for a little come and go, accounts for about 6,000 officers and officials.

The Index to the Air Force List of July 1939, the last List published, which would include only those officers who had been duly gazetted to the Air Force, and would not include N.C.O. pilots, or officers on probation, who run into thousands, contains 143 pages containing roughly 125 names apiece or very nearly 18,000 names.

When one considers that aeroplanes and aero-motors, equipment of all sorts and Reserves, have increased in the same proportion or more, one can get some idea of the effort that was being made while there was still some prospect of avoiding war.

Hereafter follow lists of the Air Councils for the past twenty years and of the R.A.F. Commands of the past twenty-one years.

ADDENDUM I

The Members of the Air Council 1918—1939

LISTS OF THE AIR COUNCILS AS CONSTITUTED AT THE END OF EACH FINANCIAL YEAR (MARCH 31) FROM THE FIRST AIR COUNCIL IN 1918 TO THE AIR COUNCIL OF MARCH 31, 1939

(Hereafter appear the names of the Members of the Air Council, as it was constituted on March 31, the end of the Financial Year, since the first Air Council was created in January 1918. These lists have been compiled for this book by The Press Section of the Air Ministry, to which I am duly grateful.—C. G. G.)

[THE NAMES ON PAGES 145 TO 160 DO NOT APPEAR IN THE INDEX]

THE FIRST AIR COUNCIL. JANUARY 3, 1918

The Rt. Hon. Lord Rothermere (Secretary of State for the Air Force); Lieut.-Gen. Sir David Henderson, K.C.B. (Additional Member and Vice-President); Maj.-Gen. Sir Hugh Trenchard, K.C.B. (Chief of the Air Staff); Rear-Admiral Mark Kerr, C.B. (Deputy Chief of the Air Staff); Commodore Godfrey M. Paine, C.B. (Master-General of Personnel); Maj.-Gen. W. S. Brancker (Controller-General of Equipment); Sir William Weir (Director-General of Aircraft Production in the Ministry of Munitions); Sir John Hunter, K.B.E. (Administrator of Works and Buildings); Major J. L. Baird, C.M.G., D.S.O., M.P. (Parliamentary Under-Secretary of State). Secretary: Mr. W. A. Robinson, C.B., C.B.E.

NOVEMBER, 1918

The Rt. Hon. the Lord Weir of Eastwood, P.C. (S. of S.); Major J. L. Baird, C.M.G., D.S.O., M.P. (P.U.S. of S.); Maj.-

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Gen. F. H. Sykes, C.M.G. (C.A.S.); Maj.-Gen. W. S. Brancker (M.-G. of P.); Maj.-Gen. E. L. Ellington (C.-G. of E.); Maj.-Gen. Sir Godfrey M. Paine, K.C.B., M.V.O. (Inspector-General of the R.A.F.); Sir Arthur Duckham, K.C.B. (D.-G. of A.P., Ministry of Munitions); Sir John Hunter, K.B.E. (A. of W. and B.); Secretary: W. A. Robinson, Esq., C.B., C.B.E.

MARCH 31, 1919

The Rt. Hon. W. S. Churchill, M.P. (S. of S.); Maj.-Gen. the Rt. Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P. (U.S. of S.); the Most Hon. the Marquess of Londonderry, M.V.O. (Finance Member of Council); Maj.-Gen. Sir H. M. Trenchard, K.C.B., D.S.O. (C.A.S.); Maj.-Gen. Sir F. H. Sykes, K.C.B., C.M.G. (Controller-General of Civil Aviation); Maj.-Gen. E. L. Ellington, C.B., C.M.G. (Director-General of Supply and Research); Sir John Hunter, K.B.E. (Administrator of Works and Buildings); Sir James Stevenson, Bart. (Additional Member); Sir Arthur Duckham, K.C.B. (Additional Member); Brig.-Gen. W. Alexander, C.M.G., D.S.O. (Additional Member). Secretary: Sir W. A. Robinson, K.C.B., C.B.E.

MARCH 31, 1920

The Rt. Hon. W. S. Churchill, M.P. (S. of S.); the Most Hon. the Marquess of Londonderry, K.G., M.V.O. (U.S. of S.); A.M. Sir H. M. Trenchard, Bart., K.C.B., D.S.O. (C.A.S.); Maj.-Gen. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G. (C.-G. of C.A.); A.V.M. E. L. Ellington, C.B., C.M.G., C.B.E. (D.-G. of S. and R.); Sir James Stevenson, Bart. (Additional Member); Wing-Cdr. Sir W. Alexander, K.B.E., C.B., C.M.G., D.S.O., T.D. (Additional Member); W. F. Nicholson, Esq. (Secretary of A.M.) (Appointed April, 1920).

MARCH 31, 1921

The Rt. Hon. W. S. Churchill, M.P. (S. of S.); the Most Hon. the Marquess of Londonderry, K.G., M.V.O. (U.S. of S.); A.M. Sir H. M. Trenchard, Bart., K.C.B., D.S.O., A.D.C. (C.A.S.); Maj.-Gen. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G.

The Members of the Air Council 1918-1939

(C.-G. of C.A.); A.V.M. Sir E. L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* (D.-G. of S. and R.); Sir James Stevenson, Bart. (Additional Member); Rear-Admiral Sir C. F. Lambert, K.C.B. (Additional Member); W. F. Nicholson, Esq., C.B. (Secretary of A.M.).

MARCH 31, 1922

Capt. the Rt. Hon. and Hon. F. E. Guest, C.B.E., D.S.O., M.P. (S. of S.); the Rt. Hon. Lord Gorell, C.B.E., M.C. (U.S. of S.); A.M. Sir H. M. Trenchard, Bart., K.C.B., D.S.O., A.D.C. (C.A.S.); Maj.-Gen. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., *p.s.c.* (C.-G. of C.A.); A.V.M. Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O., *p.s.c.* (D.-G. of S. and R.); W. F. Nicholson, Esq., C.B. (Secretary of A.M.).

MARCH 31, 1923

Lieut.-Col. the Rt. Hon. Sir Samuel J. G. Hoare, Bart., C.M.G., M.P. (S. of S.); His Grace the Duke of Sutherland (U.S. of S.); A.C.M. Sir H. M. Trenchard, Bart., K.C.B., D.S.O., A.D.C. (C.A.S.); A.V.M. O. Swann, C.B., C.B.E. (Air Member for Personnel); A.V.M. Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O., *p.s.c.* (Air Member for Supply and Research); Sir W. F. Nicholson, K.C.B. (Secretary of A.M.).

MARCH 31, 1924

Brig.-Gen. the Rt. Hon. the Lord Thomson, P.C., C.B.E., D.S.O., *p.s.c.* (S. of S.); William Leach, Esq., M.P. (U.S. of S.); A.C.M. Sir H. M. Trenchard, Bart., G.C.B., D.S.O., A.D.C. (C.A.S.); A.V.M. P. W. Game, C.B., D.S.O., *p.s.c.* (A.M.P.); A.V.M. Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O., *p.s.c.* (A.M.S.R.); Air Cmdre. J. M. Steel, C.B., C.M.G., C.B.E. (Deputy Chief of the Air Staff—Additional Member); Sir W. F. Nicholson, K.C.B. (Secretary of A.M.).

MARCH 31, 1925

Lieut.-Col. the Rt. Hon. Sir Samuel J. G. Hoare, Bart., C.M.G., M.P. (S. of S.); Major Sir Philip A. G. D. Sassoon,

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Bart., G.B.E., C.M.G., M.P. (U.S. of S.); A.C.M. Sir H. M. Trenchard, Bart., G.C.B., D.S.O. (C.A.S.); A.V.M. Sir P. W. Game, K.C.B., D.S.O., *p.s.c.* (A.M.P.); A.V.M. Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O., *p.s.c.* (A.M.S.R.); A.V.M. J. M. Steel, C.B., C.M.G., C.B.E. (D.C.A.S.—Additional Member); Sir W. F. Nicholson, K.C.B. (Secretary of A.M.).

MARCH 31, 1926

AS ABOVE

MARCH 31, 1927

Lieut.-Col. the Rt. Hon. Sir Samuel J. G. Hoare, Bart., C.M.G., M.P. (S. of S.); Major the Rt. Hon. Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); Marshal of the R.A.F. Sir Hugh M. Trenchard, Bart., G.C.B., D.S.O. (C.A.S.); A.V.M. Sir Philip W. Game, K.C.B., D.S.O., *p.s.c.* (A.M.P.); A.V.M. Sir John F. A. Higgins, K.B.E., C.B., D.S.O., A.F.C. (A.M.S.R.); Sir Walter F. Nicholson, K.C.B. (Secretary of A.M.).

MARCH 31, 1928

AS ABOVE

MARCH 31, 1929

Lieut.-Col. the Rt. Hon. Sir Samuel J. G. Hoare, Bart., G.B.E., C.M.G., M.P. (S. of S.); Major the Rt. Hon. Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); Marshal of the R.A.F. Sir Hugh M. Trenchard, Bart., G.C.B., D.S.O., D.C.L., LL.D. (C.A.S.); A.C.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C. (A.M.P.); A.M. Sir John F. A. Higgins, K.C.B., K.B.E., D.S.O., A.F.C. (A.M.S.R.); Sir Walter F. Nicholson, K.C.B. (Secretary of A.M.).

MARCH 31, 1930

Brig.-Gen. the Rt. Hon. the Lord Thomson, P.C., C.B.E., D.S.O., *p.s.c.* (S. of S.); F. Montague, Esq., M.P. (U.S. of S.);

The Members of the Air Council 1918-1939

A.C.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O. (C.A.S.); A.V.M. T. I. Webb-Bowen, C.B., C.M.G. (A.M.P.); A.M. Sir John F. A. Higgins, K.C.B., K.B.E., D.S.O., A.F.C. (A.M.S.R.); A.V.M. C. L. N. Newall, C.B., C.M.G., A.M. (D.C.A.S.—Additional Member); Sir Walter F. Nicholson, K.C.B. (Secretary of A.M.).

MARCH 31, 1931

The Rt. Hon. the Lord Amulree, P.C., G.B.E., K.C. (S. of S.); F. Montague, Esq., M.P. (U.S. of S.); A.C.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., LL.D. (C.A.S.); A.V.M. T. I. Webb-Bowen, C.B., C.M.G. (A.M.P.); A.V.M. H. C. T. Dowding, C.B., C.M.G., (A.M.S.R.); C. Ll. Bullock, Esq., C.B., C.B.E. (Secretary of A.M.).

MARCH 31, 1932

The Most Hon. the Marquess of Londonderry, K.G., M.V.O. (S. of S.); Major the Rt. Hon. Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); A.C.M. Sir John M. Salmond, G.C.B., C.M.G., C.V.O., D.S.O., LL.D. (C.A.S.); A.M. Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.*, A.D.C. (A.M.P.); A.V.M. H. C. T. Dowding, C.B., C.M.G. (A.M.S.R.); C. Ll. Bullock, Esq., C.B., C.B.E. (Secretary of A. M.).

MARCH 31, 1933

The Most Hon. the Marquess of Londonderry, K.G., M.V.O. (S. of S.); Major the Rt. Hon. Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); Marshal of the R.A.F. Sir John M. Salmond, G.C.B., C.M.G., C.V.O., D.S.O., LL.D. (C.A.S.); A.C.M. Sir Edward L. Ellington, K.C.B., C.M.G., *p.s.c.*, A.D.C. (A.M.P.); A.M. H. C. T. Dowding, C.B., C.M.G., *p.s.c.* (A.M.S.R.); Sir Christopher Ll. Bullock, K.C.B., C.B.E. (Secretary of A.M.).

MARCH 31, 1934

The Most Honourable the Marquess of Londonderry, K.G., M.V.O. (S. of S.); Major the Rt. Hon. Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); A.C.M. Sir Edward

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Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* (C.A.S.); A.V.M. F. W. Bowhill, C.M.G., D.S.O. (A.M.P.); A.M. Sir Hugh C. T. Dowding, K.C.B., C.M.G., *p.s.c.* (A.M.S.R.); Sir Christopher Ll. Bullock, K.C.B., C.B.E. (Secretary of A.M.).

MARCH 31, 1935

The Most Hon. the Marquess of Londonderry, K.G., M.V.O. (S. of S.); Major the Rt. Hon Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); A.C.M. Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* (C.A.S.); A.V.M. F. W. Bowhill, C.M.G., D.S.O. (A.M.P.); A.M. Sir Hugh C. T. Dowding, K.C.B., C.M.G., *p.s.c.* (Air Member for Research and Development); A.V.M. C. L. N. Newall, C.B., C.M.G., C.B.E., A.M. (Air Member for Supply and Organization); Sir Christopher Ll. Bullock, K.C.B., C.B.E. (Secretary of A.M.).

MARCH 31, 1936

The Rt. Hon. the Viscount Swinton, G.B.E., M.C. (S. of S.); Major the Rt. Hon. Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); A.C.M. Sir Edward L. Ellington, G.C.B., C.M.G., C.B.E., *p.s.c.* (C.A.S.); A.M. Sir Frederick W. Bowhill, K.C.B., C.M.G., D.S.O. (A.M.P.); A.M. Sir Hugh C. T. Dowding, K.C.B., C.M.G., *p.s.c.* (A.M.R.D.); A.M. Sir Cyril L. N. Newall, K.C.B., C.M.G., C.B.E., A.M. (A.M.S.O.); Sir Christopher Ll. Bullock, K.C.B., C.B.E. (Secretary of A.M.).

MARCH 31, 1937

The Rt. Hon. Viscount Swinton, G.B.E., M.C. (S. of S.); Major the Rt. Hon. Sir Philip A. G. D. Sassoon, Bart., G.B.E., C.M.G., M.P. (U.S. of S.); Marshal of the R.A.F. Sir Edward L. Ellington, G.C.B., C.M.G., C.B.E., *p.s.c.* (C.A.S.); A.M. Sir Frederick W. Bowhill, K.C.B., C.M.G., D.S.O. (A.M.P.); A.M. W. R. Freeman, C.B., D.S.O., M.C., *p.s.c.* (A.M.R.D.); A.M. Sir Cyril L. N. Newall, K.C.B., C.M.G., C.B.E., A.M. (A.M.S.O.); Colonel Sir Donald Banks, K.C.B., D.S.O., M.C. (Secretary of A.M.).

The Members of the Air Council 1918-1939

MARCH 31, 1938

The Rt. Hon. Viscount Swinton, G.B.E., M.C. (S. of S.); Rt. Hon. the Earl Winterton, M.P. (Chancellor of the Duchy of Lancaster, Deputy to the S. of S.); Lieut.-Col. A. J. Muirhead, M.C., M.P. (U.S. of S.); A.C.M. Sir Cyril L. N. Newall, K.C.B., C.M.G., C.B.E., A.M. (C.A.S.); A.M. Sir William G. S. Mitchell, K.C.B., C.B.E., D.S.O., M.C., A.F.C. (A.M.P.); A.M. Sir Wilfred R. Freeman, K.C.B., D.S.O., M.C., *p.s.a.* (A.M.R.D.); A.V.M. W. L. Welsh, C.B., D.S.C., A.F.C., (A.M.S.O.); Col. Sir Donald Banks, K.C.B., D.S.O., M.C. (Permanent Under-Secretary of State for Air).

MARCH 31, 1939

The Rt. Hon. Sir Kingsley Wood, M.P. (S. of S.); Captain H. H. Balfour, M.C., M.P. (P.U.S. of S.A.); A.C.M. Sir Cyril L. N. Newall, G.C.B., C.M.G., C.B.E., A.M. (C.A.S.); A.V.M. C. F. A. Portal, C.B., D.S.O., M.C. (A.M.P.); A.M. Sir Wilfred R. Freeman, K.C.B., D.S.O., M.C., *p.s.a.* (A.M.D.P.); A.V.M. W. L. Welsh, C.B., D.S.C., A.F.C. (A.M.S.O.); E. J. H. Lemon, O.B.E., M.I.Mech.E., M.Inst.T. (Director-General of Production); Col. Sir Donald Banks, K.C.B., D.S.O., M.C. (P.U.S.) (*at this time on a mission to Australia and New Zealand*); Sir Arthur Street, K.B.E., C.B., C.M.G., C.I.E., M.C. (First Deputy Under-Secretary of State, Acting P.U.S.).

ADDENDUM II

Commands in the R.A.F. 1918-1938

LISTS OF THE R.A.F. COMMANDS, WITH NAMES OF THE AIR OFFICERS COMMANDING, FROM THE FORMATION OF THE NEW R.A.F. AREAS IN AUGUST 1918 UP TO THE COMMANDS OF MARCH 1939

(Hereafter follows a list of the Commands in the R.A.F. and of the Air Officers Commanding, as they have been from August 1918 to the Declaration of War on September 3, 1939. The lists have been compiled by The Press Section of the Air Ministry, to which I am duly grateful.—C. G. G.)

August, 1918: *South-Eastern Area:*—Maj.-Gen. F. C. Heath Caldwell, C.B., *p.s.c.* *South-Western Area:*—Maj.-Gen. M. E. F. Kerr, C.B., *M.V.O.* *Midland Area:*—Maj.-Gen. J. F. A. Higgins, *D.S.O.* *North-Eastern Area:*—Maj.-Gen. Hon. Sir F. Gordon, *K.C.B.*, *D.S.O.*, *p.s.c.* *North-Western Area:*—Maj.-Gen. G. C. Cayley, C.B.

March 31, 1919: *South-Eastern Area:*—Col. (Acting Maj.-Gen.) T. I. Webb-Bowen, *C.M.G.* *South-Western Area:*—Col. (Acting Maj.-Gen.) C. A. H. Longcroft, *C.M.G.*, *D.S.O.*, *A.F.C.* *Midland Area:*—Col. (Acting Maj.-Gen.) C. L. Lambe, *C.M.G.*, *D.S.O.* *North-Western Area:*—Maj.-Gen. G. C. Cayley, C.B.

March, 1920: *Northern Area:*—A.V.M. J. F. A. Higgins, *C.B.*, *D.S.O.*, *A.F.C.* *Southern Area:*—A.V.M. Sir J. M. Salmond, *K.C.B.*, *C.M.G.*, *C.V.O.*, *D.S.O.* *No. 11 (Irish) Group:*—Grp. Capt. I. M. Bonham-Carter, *O.B.E.* *Coastal Area:* A.V.M. A. V. Vyvyan, *C.B.*, *D.S.O.* *R.A.F. H.Q., Cranwell:*—Air Cmdre. C. A. H. Longcroft, *C.M.G.*, *D.S.O.*, *A.F.C.* *R.A.F. H.Q., Halton:*—Air Cmdre. F. R. Scarlett, *C.B.*, *D.S.O.* *Middle East:*—Air Cmdre. W. G. H. Salmond, *D.S.O.* *India:* Air

Commands in the R.A.F. 1918-1938

Cmdre. T. I. Webb-Bowen, C.B., C.M.G. *Mediterranean District*: Air Cmdre. Oliver Swann, C.B., C.B.E.

April, 1920 : *Inland Area*:—A.V.M. Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O. *No. 11 (Irish) Group*:—Grp. Capt. I. M. Bonham-Carter, O.B.E. *Coastal Area*:—A.V.M. Arthur V. Vyvyan, C.B., D.S.O. *Middle East Area*:—A.V.M. Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O. *Indian Group*:—Air Cmdre. T. I. Webb-Bowen, C.B., C.M.G. *Mediterranean Group*:—Air Cmdre. O. S. Swann, C.B., C.M.G. *R.A.F. H.Q., Cranwell*:—Air Cmdre. C. A. H. Longcroft, C.M.G., D.S.O., A.F.C. *R.A.F., H.Q., Halton*:—Air Cmdre. F. R. Scarlett, C.B., D.S.O.

March 31, 1921 : *Inland Area*:—A.V.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O. *No. 11 (Irish) Wing*:—Grp. Capt. I. M. Bonham-Carter, O.B.E. *Coastal Area*:—A.V.M. Arthur V. Vyvyan, C.B., D.S.O. *R.A.F., Cranwell*:—Air Cmdre. C. A. H. Longcroft, C.M.G., D.S.O., A.F.C. *R.A.F., Halton*:—Air Cmdre. F. R. Scarlett, C.B., D.S.O. *Middle East Area*:—A.V.M. Sir G. H. Salmond, K.C.M.G., C.B., D.S.O., *p.s.c.* *Indian Group*:—Air Cmdre. T. I. Webb-Bowen, C.B., C.M.G. *Mediterranean Group*:—Grp. Capt. E. L. Gerrard, C.M.G., D.S.O.

March 31, 1922 : *Inland Area*:—(As above). *Coastal Area*:—(As above). *R.A.F., Cranwell*:—(As above). *R.A.F., Halton*:—(As above). *R.A.F., Middle East*:—A.V.M. Sir E. L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* *R.A.F., 'Iraq*:—Grp. Capt. A. F. Borton, C.B., C.M.G., D.S.O., A.F.C. *R.A.F., India*:—Air Cmdre. T. I. Webb-Bowen, C.B., C.M.G.; *Mediterranean*:—Air Cmdre. C. R. Samson, C.M.G., D.S.O., A.F.C. *R.A.F. Ireland*:—Grp. Capt. I. M. Bonham-Carter, O.B.E.

March 31, 1923 : *Inland Area*:—A.V.M. J. F. A. Higgins, C.B., D.S.O., A.F.C. *Coastal Area*:—A.V.M. A. V. Vyvyan, C.B., D.S.O. *R.A.F., Cranwell*:—Air Cmdre. C. A. H. Longcroft, C.M.G., D.S.O., A.F.C. *R.A.F., Halton*:—Air Cmdre. F. R. Scarlett, C.B., D.S.O. *R.A.F., Middle East*:—A.V.M. Sir Edward Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* *'Iraq Command*:—A.V.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O.

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R.A.F., India:—A.V.M. P. W. Game, C.B., D.S.O., *p.s.c.* *R.A.F., Mediterranean*:—Grp. Capt. A. W. Bigsworth, C.M.G., D.S.O., A.F.C. *Palestine Command*:—Maj.-Gen. (temporary A.V.M.) Sir H. H. Tudor, K.C.B., C.M.G.

March 31, 1924: *Inland Area*:—Air Cmdre. T. I. Webb-Bowen, C.B., C.M.G. *Coastal Area*:—A.V.M. Sir Vyell Vyvyan, K.C.B., D.S.O. *R.A.F., Cranwell*:—Air Cmdre. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C. *R.A.F., Halton*:—Air Cmdre. C. L. Lambe, C.B., C.M.G., D.S.O. *R.A.F., Middle East*:—A.V.M. Sir Oliver Swann, K.C.B., C.B.E. *'Iraq Command*:—A.M. Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O. *R.A.F., India*:—A.V.M. Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* *R.A.F., Mediterranean*:—Grp. Capt. Arthur W. Bigsworth, C.M.G., D.S.O., A.F.C. *Palestine Command*:—Air Cmdre. E. L. Gerrard, C.M.G., D.S.O.

March 31, 1925: *Air Defences of Great Britain*:—A.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C. *Inland Area*:—Air Cmdre. T. I. Webb, C.B., C.M.G. *Coastal Area*:—A.V.M. F. R. Scarlett, C.B., D.S.O. *R.A.F., Cranwell*:—Air Cmdre. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C. *R.A.F., Halton*:—A.V.M. C. L. Lambe, C.B., C.M.G., D.S.O. *R.A.F., Middle East*:—A.V.M. Sir Oliver Swann, K.C.B., C.B.E. *'Iraq Command*:—A.V.M. J. F. A. Higgins, C.B., D.S.O., A.F.C. *R.A.F., India*:—A.V.M. Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* *Palestine Command*:—Air Cmdre. E. L. Gerrard, C.M.G., D.S.O.

March 31, 1926: *Air Defences of Great Britain*:—A.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C. *Inland Area*:—A.V.M. T. I. Webb-Bowen, C.B., C.M.G. *Coastal Area*:—A.V.M. F. R. Scarlett, C.B., D.S.O. *R.A.F., Cranwell*:—Air Cmdre. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C. *R.A.F., Halton*:—A.V.M. C. L. Lambe, C.B., C.M.G., D.S.O. *Special Reserve and Auxiliary Air Force*:—Air Cmdre. J. G. Hearson, C.B., C.B.E., D.S.O. *R.A.F., Middle East*:—A.V.M. Sir Oliver Swann, K.C.B., C.B.E. *'Iraq Command*:—A.V.M. Sir John F. A. Higgins, K.B.E., C.B., D.S.O., A.F.C. *R.A.F., India*:—A.V.M.

Commands in the R.A.F. 1918-1938

Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* *Palestine Command*:—Air Cmdre. E. L. Gerrard, C.M.G., D.S.O. *R.A.F., Mediterranean*:—Air Cmdre. R. H. Clark-Hall, C.M.G., D.S.O., *p.s.a.*

March 31, 1927: *Air Defence of Great Britain*:—A.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C. *Inland Area*:—A.V.M. C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C. *Coastal Area*:—A.V.M. F. R. Scarlett, C.B., D.S.O. *R.A.F., Cranwell*:—Air Cmdre. F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O. *R.A.F., Halton*:—A.V.M. C. L. Lambe, C.B., C.M.G., D.S.O. *R.A.F., Middle East*:—A.V.M. T. I. Webb-Bowen, C.B., C.M.G. *'Iraq Command*:—A.V.M. Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* *R.A.F., India*:—A.V.M. Sir Geoffrey H. Salmond, K.C.B., K.C.M.G., D.S.O., *p.s.c.* *R.A.F., Mediterranean*:—Air Cmdre. R. H. Clark-Hall, C.M.G., D.S.O., *p.s.a.*

March 31, 1928: *Air Defence of Great Britain*:—A.M. Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C. *Inland Area*:—A.V.M. C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C. *Coastal Area*:—A.V.M. F. R. Scarlett, C.B., D.S.O. *R.A.F., Cranwell*:—Air Cmdre. F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O. *R.A.F., Halton*:—Air Cmdre. C. L. Lambe, C.B., C.M.G., D.S.O. *R.A.F., Middle East*:—A.V.M. T. I. Webb-Bowen, C.B., C.M.G. *'Iraq Command*:—A.V.M. Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E. *R.A.F., India*:—A.V.M. Sir W. Geoffrey H. Salmond, K.C.B., K.C.M.G., D.S.O., *p.s.c.* *R.A.F., Mediterranean*:—Air Cmdre. R. H. Clark-Hall, C.M.G., D.S.O., *p.s.a.* *Aden Command*:—Grp. Capt. W. G. S. Mitchell, C.B.E., D.S.O., M.C., A.F.C. *R.A.F., China*:—Grp. Capt. E. D. M. Robertson, D.F.C.

March 31, 1929: *Air Defence of Great Britain*:—A.V.M. Sir Edward L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.* *Inland Area*:—A.V.M. C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C. *Coastal Area*:—A.V.M. C. L. Lambe, C.B., C.M.G., D.S.O. *R.A.F., Cranwell*:—A.V.M. F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O. *R.A.F., Halton*:—Air Cmdre. I. M.

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Bonham-Carter, C.B., O.B.E. *R.A.F., Middle East*:—A.V.M. T. I. Webb-Bowen, C.B., C.M.G. *'Iraq Command*:—A.V.M. Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C. *R.A.F., India*:—A.V.M. Sir W. Geoffrey H. Salmond, K.C.B., K.C.M.G., D.S.O., *p.s.c.* *R.A.F., Mediterranean*:—Air Cmdre. J. L. Forbes, O.B.E. *Aden Command*:—Grp. Capt. W. G. S. Mitchell, C.B.E., D.S.O., M.C., A.F.C.

March 31, 1930: *Air Defence of Great Britain*:—A.M. Sir E. L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.*, A.D.C. *Inland Area*:—A.V.M. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C. *Coastal Area*:—A.V.M. C. L. Lambe, C.B., C.M.G., D.S.O. *R.A.F., Cranwell*:—A.V.M. A. M. Longmore, C.B., D.S.O., *q.s.* *R.A.F., Halton*:—Air Cmdre. I. M. Bonham-Carter, C.B., O.B.E. *R.A.F., Middle East*:—A.V.M. F. R. Scarlett, C.B., D.S.O. *'Iraq Command*:—A.V.M. Sir Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., *p.s.c.* *R.A.F., India*:—Sir W. G. H. Salmond, K.C.B., K.C.M.G., D.S.O., *p.s.c.* *R.A.F., Mediterranean*:—Air Cmdre. J. L. Forbes, O.B.E. *Aden Command*:—Grp. Capt. C. T. Maclean, D.S.O., M.C.

March 31, 1931: *Air Defence of Great Britain*:—A.M. Sir E. L. Ellington, K.C.B., C.M.G., C.B.E., *p.s.c.*, A.D.C. *Inland Area*:—A.V.M. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C. *Coastal Area*:—A.V.M. C. L. Lambe, C.B., C.M.G., D.S.O. *R.A.F., Cranwell*:—A.V.M. A. M. Longmore, C.B., D.S.O., *q.s.* *R.A.F., Halton*:—Air Cmdre. I. M. Bonham-Carter, C.B., O.B.E. *R.A.F., Middle East*:—A.V.M. F. R. Scarlett, C.B., D.S.O. *'Iraq Command*:—A.V.M. E. R. Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C., *p.s.a.* *R.A.F., India*:—A.V.M. Sir John M. Steel, K.B.E., C.B., C.M.G. *R.A.F., Mediterranean*:—Air Cmdre. J. L. Forbes, O.B.E. *Aden Command*:—Grp. Capt. C. T. Maclean, D.S.O., M.C. *Far East Command*:—Grp. Capt. A. H. Jackson, *p.s.a.*

March 31, 1932: *Air Defence of Great Britain*:—A.M. Sir W. G. H. Salmond, K.C.B., K.C.M.G., D.S.O., *p.s.c.* *Inland Area*:—A.V.M. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C. *Coastal Area*:—A.V.M. R. H. Clark-Hall, C.M.G., D.S.O., *p.s.a.* *R.A.F., Cranwell*:—A.V.M. A. M. Longmore, C.B., D.S.O., *q.s.*

Commands in the R.A.F. 1918-1938

R.A.F., Halton:—A.V.M. N. D. K. MacEwen, C.M.G., D.S.O.
R.A.F., Middle East:—A.V.M. C. L. N. Newall, C.B., C.M.G.,
C.B.E., A.M. *'Iraq Command:*—A.V.M. E. R. Ludlow-Hewitt,
C.B., C.M.G., D.S.O., M.C., *p.s.a.* *R.A.F., India:*—A.M. Sir
John M. Steel, K.B.E., C.B., C.M.G. *R.A.F., Mediterranean:*—
Air Cmdre. C. E. H. Rathborne, D.S.O. *Aden Command:*—Grp.
Capt. O. T. Boyd, O.B.E., M.C., A.F.C., *q.s.* *Far East Com-*
mand:—Grp. Capt. A. H. Jackson, *p.s.a.*

March 31, 1933: *Air Defence of Great Britain:*—A.M. Sir
R. Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., *p.s.c.*
Wessex Bombing Area:—A.V.M. Sir T. Webb-Bowen, K.C.B.,
C.M.G. *Fighting Area:*—A.V.M. F. W. Bowhill, C.M.G., D.S.O.
Inland Area:—A.V.M. A. M. Longmore. *Coastal Area:*—A.V.M.
R. H. Clark-Hall, C.M.G., D.S.O., *p.s.a.* *R.A.F., Cranwell:*—Air
Cmdre. W. G. S. Mitchell, C.B.E., D.S.O., M.C., A.F.C. *R.A.F.,*
Halton:—A.V.M. N. D. K. MacEwen, C.M.G., D.S.O. *R.A.F.,*
Middle East:—A.V.M. C. L. N. Newall, C.B., C.M.G., C.B.E.,
A.M. *'Iraq Command:*—A.V.M. C. S. Burnett, C.B., C.B.E.,
D.S.O. *R.A.F., India:*—A.M. Sir John M. Steel, K.B.E., C.B.,
C.M.G. *R.A.F., Mediterranean:*—Air Cmdre. C. E. H. Rath-
borne, D.S.O. *Aden Command:*—Grp. Capt. O. T. Boyd, O.B.E.,
M.C., A.F.C., *q.s.* *R.A.F., Far East:*—Grp. Capt. A. H.
Jackson, *p.s.a.*

March 31, 1934: *Air Defence of Great Britain:*—A.M. Sir
R. Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., *p.s.c.*,
A.D.C. *Western Area:*—A.V.M. P. H. L. Playfair, C.B., M.C.
Central Area:—Air Cmdre. H. R. Nicholl, C.B.E., *q.s.* *Fighting*
Area:—A.V.M. P. B. Joubert de la Ferté, C.M.G., D.S.O., *p.s.a.*
Inland Area:—A.V.M. A. M. Longmore, C.B., D.S.O., *q.s.*
Coastal Area:—A.M. R. H. Clark-Hall, C.M.G., D.S.O., *p.s.a.*
R.A.F., Cranwell:—A.V.M. W. G. S. Mitchell, C.B.E., D.S.O.,
M.C., A.F.C. *R.A.F., Halton:*—A.V.M. N. D. K. MacEwen,
C.M.G., D.S.O. *R.A.F., Middle East:*—A.V.M. C. L. N. Newall,
C.B., C.M.G., C.B.E., A.M. *British Forces in 'Iraq:*—A.V.M.
C. S. Burnett, C.B., C.B.E., D.S.O. *R.A.F., India:*—A.M. Sir
John M. Steel, K.B.E., C.B., C.M.G. *R.A.F., Mediterranean:*—
Air Cmdre. C. E. H. Rathborne, D.S.O. *Aden Command:*—Grp.

A History of the Air Ministry

Capt. C. F. A. Portal, D.S.O., M.C., *p.s.a.* *R.A.F., Far East*:—
Grp. Capt. S. W. Smith, O.B.E., *q.s.*

March 31, 1935: *Air Defence of Great Britain*:—A.C.M. Sir R. Brooke-Popham, K.C.B., C.M.G., D.S.O., *p.s.c.*, A.D.C. *Western Area*:—A.V.M. P. H. L. Playfair, C.B., M.C. *Central Area*:—Air Cmdre. H. R. Nicholl, C.B.E., *q.s.* *Fighting Area*:—A.V.M. P. B. Joubert de la Ferté, C.M.G., D.S.O., *p.s.a.* *Inland Area*:—A.V.M. C. S. Burnett, C.B., C.B.E., D.S.O. *Coastal Area*:—A.M. A. M. Longmore, C.B., D.S.O., *q.s.* *R.A.F., Cranwell*:—Air Cmdre. H. M. Cave-Browne-Cave, D.S.O., D.F.C. *R.A.F., Halton*:—Air Cmdre. J. T. Babington, C.B.E., D.S.O., *p.s.a.* *R.A.F., Middle East*:—A.V.M. C. T. Maclean, C.B., D.S.O., M.C. *British Forces in 'Iraq*:—A.V.M. W. G. S. Mitchell, C.B., C.B.E., D.S.O., M.C., A.F.C. *R.A.F., India*:—A.M. Sir John M. Steel, K.C.B., K.B.E., C.M.G. *R.A.F., Mediterranean*:—Air Cmdre. C. E. H. Rathborne, C.B., D.S.O. *Aden Command*:—Air Cmdre. C. F. A. Portal, D.S.O., M.C., *p.s.a.* *R.A.F., Far East*:—Air Cmdre. S. W. Smith, O.B.E., *q.s.*

March 31, 1936: *Air Defence of Great Britain*:—A.M. Sir John M. Steel, K.C.B., K.B.E., C.M.G. *Training Command*:—A.M. Sir C. S. Burnett, K.C.B., C.B.E., D.S.O. *Coastal Command*:—A.M. Sir A. M. Longmore, K.C.B., D.S.O., *q.s.* *R.A.F., Cranwell*:—A.V.M. H. M. Cave-Browne-Cave, C.B., D.S.O., D.F.C. *R.A.F., Halton*:—Air Cmdre. J. T. Babington, C.B.E., D.S.O., *p.s.a.* *R.A.F., Middle East*:—A.V.M. C. T. Maclean, C.B., D.S.O., M.C. *British Forces in Palestine and Transjordan*:—A.V.M. R. E. C. Peirse, D.S.O., A.F.C., *p.s.a.* *British Forces in 'Iraq*:—A.V.M. W. G. S. Mitchell, C.B., C.B.E., D.S.O., M.C., A.F.C. *R.A.F., India*:—A.M. Sir Edgar R. Ludlow-Hewitt, K.C.B., C.M.G., D.S.O., M.C., *p.s.a.* *R.A.F., Mediterranean*:—Air Cmdre. P. C. Maltby, D.S.O., A.F.C., *p.s.a.* *Aden Command*:—A.V.M. E. L. Gossage, D.S.O., M.C., *p.s.a.* *R.A.F., Far East*:—Air Cmdre. S. W. Smith, O.B.E., *q.s.*

March 31, 1937: *Bomber Command*:—A.C.M. Sir John M. Steel, K.C.B., K.B.E., C.M.G. *Fighter Command*:—A.C.F. Sir Hugh C. T. Dowding, K.C.B., C.M.G., A.D.C., *p.s.c.* *Coastal*

Commands in the R.A.F. 1918-1938

Command:—A.M. P. B. Joubert de la Ferté, C.B., C.M.G., D.S.O., *i.d.c.*, *p.s.a.* *Training Command*:—A.M. Sir Charles S. Burnett, K.C.B., C.B.E., D.S.O. *R.A.F., Middle East*:—A.V.M. C. T. Maclean, C.B., D.S.O., M.C. *R.A.F., in Palestine*:—Air Cmdre. R. M. Hill, M.C., A.F.C., *p.s.a.* *British Forces in 'Iraq*:—A.V.M. C. L. Courtney, C.B., C.B.E., D.S.O., *p.s.a.* *R.A.F., India*:—A.M. Sir Edgar R. Ludlow-Hewitt, K.C.B., C.M.G., D.S.O., M.C., *p.s.a.* *R.A.F., Mediterranean*:—Air Cmdre. P. C. Maltby, D.S.O., A.F.C., *i.d.c.*, *p.s.a.* *British Forces in Aden*:—Grp. Capt. W. A. McClaughry, D.S.O., M.C., D.F.C., *i.d.c.*, *p.s.a.* (Acting Air Cmdre.). *R.A.F., Far East*:—Air Cmdre. A. W. Tedder, C.B., *i.d.c.*, *p.s.a.*

March 31, 1938: *Bomber Command*:—A.C.M. Sir Edgar R. Ludlow-Hewitt, K.C.B., C.M.G., D.S.O., M.C., *p.s.a.* *Fighter Command*:—A.C.M. Sir Hugh C. T. Dowding, G.C.V.O., K.C.B., C.M.G., A.D.C., *p.s.c.* *Coastal Command*:—A.M. Sir Frederick W. Bowhill, K.C.B., C.M.G., D.S.O. *Training Command*:—A.M. Sir Charles S. Burnett, K.C.B., C.B.E., D.S.O. *R.A.F., Middle East*:—A.V.M. H. R. Nicholl, C.B.E., *q.s.* *R.A.F. in Palestine*:—Air Cmdre. R. M. Hill, M.C., A.F.C., *p.s.a.* *British Forces in 'Iraq*:—A.V.M. C. L. Courtney, C.B., C.B.E., D.S.O., *p.s.a.* *R.A.F., India*:—A.M. P. B. Joubert de la Ferté, C.B., C.M.G., D.S.O., *i.d.c.*, *p.s.a.* *R.A.F., Mediterranean*:—Air Cmdre. P. C. Maltby, D.S.O., A.F.C., *i.d.c.*, *p.s.a.* *British Forces in Aden*:—Air Cmdre. W. A. McClaughry, D.S.O., M.C., D.F.C., *i.d.c.*, *p.s.a.* *R.A.F., Far East*:—A.V.M. A. W. Tedder, C.B., *i.d.c.*

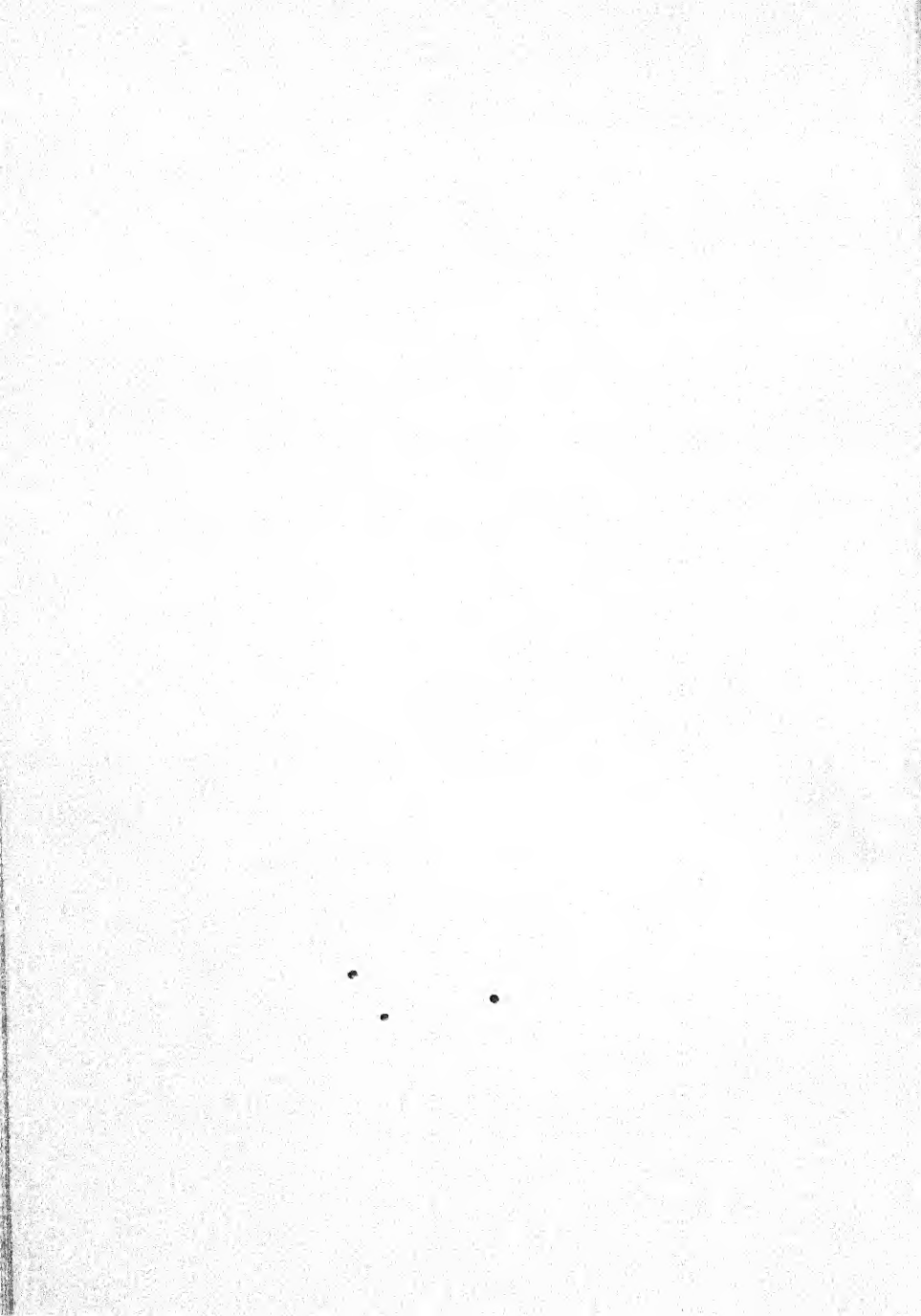
March 31, 1939: *Bomber Command*:—A.C.M. Sir Edgar K. Ludlow-Hewitt, K.C.B., C.M.G., D.S.O., M.C., *p.s.a.* *Fighter Command*:—A.C.M. Sir Hugh C. T. Dowding, G.C.V.O., K.C.B., C.M.G., A.D.C., *p.s.c.* *Coastal Command*:—A.M. Sir Frederick W. Bowhill, K.C.B., C.M.G., D.S.O. *Training Command*:—A.M. Sir Charles S. Burnett, K.C.B., C.B.E., D.S.O. *Maintenance Command*:—A.V.M. J. S. T. Bradley, O.B.E., *i.d.c.* *Balloon Command*:—A.V.M. O. T. Boyd, O.B.E., M.C., A.F.C., *q.s.* *Reserve Command*:—A.M. C. L. Courtney, C.B., C.B.E., D.S.O., *p.s.a.* *R.A.F., Middle East*:—A.V.M. H. R. Nicholl, C.B., C.B.E., *q.s.* *R.A.F., Palestine*:—Air Cmdre. A. T. Harris, O.B.E., A.F.C.

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British Forces in 'Iraq:—A.V.M. J. H. S. Tyssen, M.C. *Air Forces in India:*—A.M. Sir Philip B. Joubert de la Ferté, K.C.B., C.M.G., D.S.O., *i.d.c.*, *p.s.a.* *R.A.F., Mediterranean:*—Air Cmdre. R. Leckie, D.S.O., D.S.C., D.F.C., *q.s.* *British Forces in Aden:*—A.V.M. G. R. M. Reid, D.S.O. *R.A.F., Far East:*—A.V.M. J. T. Babington, C.B., C.B.E., D.S.O., *p.s.a.*

PART III

From War 1918 to War 1939



CHAPTER SIXTEEN

Disintegration and Re-Incarnation

An Air Ministry of 1919—Cutting Down the Air Force—The 1919 Airship Programme—Encouraging Civil Aviation—The Air Navigation Act, 1919—Aircraft Transport and Travel Ltd.—The Beginning of Joy Riding—The advisory Committee on Civil Aviation, 1919—The First Crossing of the Atlantic by Air and by Americans—The First non-stop Crossing (Newfoundland to Ireland) by Alcock and Brown—The First Crossing by Airship (the R.34)—New Rank Titles in the R.A.F.—The Emergency (Strike) Air Mail Service—The London-Paris Air Mail Service Begins—The First England-Australia Flight

THE first act of the new Cabinet, in which the Right Honourable Winston Spencer Churchill was Secretary of State for War and Air, with Major General the Right Honourable J. E. B. Seely, C.B.E., C.M.G., D.S.O., as Under-Secretary of State for Air, after its formation on February 12, 1919, was practically to disintegrate the Air Force. Admittedly a majority of the 30,000 officers and 300,000 men, did "want to get home to their tea," as Kipling had said, but cutting down such a Force to 5,300 officers and 54,000 men, which was the Peace Establishment as laid down in the Air Estimates 1919-20—introduced in the House of Commons by General Seely on March 13, 1919—meant that a great many officers and men who would have liked to stay in the Air Force had to get out of it whether they liked it or not. And in that way we lost many good men.

Also the reduction of the Air Estimates from £200,000,000, which they would have been if the War had continued, to £66,500,000 meant rigid economies all round. The reduction seemed colossal at the time, but the Air Ministry was forced to do with much less money than that in subsequent Estimates.

A curious factor in the Air Ministry's policy at that time

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was that in spite of the terrific reduction in aeroplanes and personnel, a sum of £3,000,000 was allocated to Civil Aviation and Research, and quite a considerable airship programme was continued.

A fact to be noted is that for several months in 1919 aeroplane factories went on turning out machines in large quantities, which were delivered at much expense to R.A.F. Aircraft Parks and there burnt. No attempt was made to save even raw material for possible commercial uses.

During the War a large number of airships had been built. In the first year or so the curious little non-rigid ships which consisted of the envelope of a small streamlined balloon with the body, or fuselage, of an aeroplane slung underneath it,—which had been nicknamed the Blimp by Mr. Horace Short, of Short Brothers, the great seaplane firm—soon proved their value for anti-submarine patrols. Bigger non-rigid ships with specially-built cars succeeded them. These again developed into twin-engined ships with non-rigid envelopes. Altogether several hundreds of them were built.

At the same time experiments were being made with rigid ships built more or less on the lines of the German Zeppelins,—or perhaps one might call them successors of the Navy's ill-fated pre-War *Mayfly*, which was built at Barrow by Vickers Ltd., Beardmores, the great ship-building firm in Glasgow, Vickers Ltd. at their ship-building works at Barrow-in-Furness, and Short Brothers at Bedford—this last a branch of the seaplane firm—all built rigid airships.

The detail designs of those built by Vickers and Beardmores were strongly influenced by the wrecks of Zeppelins which had been shot down in England or in France. They were built of Duralumin, an aluminium alloy which needs special handling, but is very good when handled properly. The ships built by Short Brothers of Bedford were built mainly of wood, on the lines of the German Schütte-Lanz.

The most successful ship of all these, the rigid airship R.34, built by Beardmores on the Clyde, made its first trip on

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March 14, 1919. In July it became the first air vehicle to cross the Atlantic out and home without mishap.

The beginning of the year 1919 was notable for the Air Ministry's first step towards controlling and if possible fostering Civil Aviation. Ever since that day opinion among aeronautical folk has been fairly equally divided on the question whether Air Ministry control of Civil Aviation has meant the kind of control that a driver has over a car with his brakes, or whether Air Ministry control has in fact encouraged Civil Aviation.

We English have a liking for criticizing ourselves and, more particularly those of ourselves who have been set in authority over us. So perhaps the Department of Civil Aviation from its beginnings has had more adverse criticisms than it deserves.

To begin with, nobody knew anything about Civil Aviation so nobody knew the direction in which it ought to be controlled or directed or fostered. The enthusiasts hoped that after all the booming and boosting the Flying Services had had in the Press during the War, everybody would long to fly and that Air Transport would be the thing, and as done. The idea did not occur to them that the vivid stories of the perils of our heroic aviators which had been so widely published were not likely to encourage prospective airfarers, or that thousands of people who had endured those perils and tens of thousands who had been bombed never wanted to see or hear an aeroplane again.

A number of enterprising people started to develop Civil Aviation according to their own ideas as soon as Civil Aviation became legal. The Air Navigation Bill passed all its stages in the House and became the Air Navigation Act in January, 1919. Shortly afterwards Mr. Holt Thomas, the founder and chief of the great Aircraft Manufacturing Co. Ltd. which had built all the De Havilland designs during the War, started a firm called Aircraft Transport and Travel Ltd. Brigadier-General Francis Festing, C.M.G., who was Sir Hugh Trenchard's Chief of Personnel in France resigned his Commission in April and

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was appointed Managing Director of the firm. He was also joined by Major-General Sir Sefton Brancker, K.C.B., who, as the earlier part of this book tells had played such an important part in building up the Royal Flying Corps in its early days.

Officially Civil Aviation was to begin on April 17 but because of various political delays the opening of the air lines was postponed, but special permission was given for passenger flights during the Easter Holidays, April 17-22. These flights were limited to a radius of three miles from any approved aerodrome. This kind of flying for hire or reward became known as "Joy-Riding." It was developed at first by the Berkshire Aviation Co. Ltd. (the Brothers J. D. V. and F. J. V. Holmes of Wantage) and the Avro Co. Later Sir Alan Cobham, who started with the Holmes Brothers, made a regular industry of it.

That was really the beginning of Civil Aviation in England under the Air Ministry. Actually the ban on Civil Aviation was finally removed on May 1, but with curious ill-fortune the weather on that day was unsuitable for flying and several serious accidents marred the rebirth of civil flying.

The officially recognized air lines were Aircraft Travel and Transport Ltd., Handley Page Transport Ltd.—both formed for the purpose of air transport—and Instone Air Lines Ltd. which was a development of a private transport business which had been started by Instone Brothers, the coal dealers of Cardiff.

Soon after the Armistice they started dealing in coal with France and to speed up the interchange of documents with their French customers they bought an aeroplane and transported documents and occasionally personnel in it. From that they bought other aeroplanes and started a regular cross-Channel air line.

Mr. Hubert Scott-Paine, who at the time controlled the Supermarine Aviation Works Ltd. at Southampton—mentioned in the first part of this book—also started an air line

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which operated flying-boats between Southampton and Jersey. All these lines used war-machines which were modified to carry passengers in varying degrees of discomfort and danger,—judged by to-day's ideas.

On June 23, 1919, an Advisory Committee on Civil Aviation was formed by the Secretary of State for Air. It included Lord Weir, Lord Inchcape, Sir James Stevens, Lieutenant-Colonel Moore Brabazon (Great Britain's No. 1 Pilot on the Aero Club's Register), the Chairman of Lloyd's, the Chairman of the Society of British Aircraft Constructors (Mr. H. White Smith, C.B.E.), Mr. E. Bairstow, F.R.S., a well-known scientist, Lieutenant-General Sir Hugh Trenchard, Chief of the Air Staff, Major-General Sir F. H. Sykes, Contoller-General of Civil Aviation, and Sir Arthur Robinson. Just what advice that Committee gave on Civil Aviation has never been very clear.

Although the events have no direct connection with the Air Ministry as such, beyond the fact that the Ministry's approval was necessary in one way or another, nevertheless I think that we may properly place on record here the fact that on May 8, 1919, three Curtiss flying-boats of the U.S. Navy started from Rockaway Beach, Long Island, U.S.A., for Trepassey, Newfoundland. The affair was organized by Commander John Towers, U.S.N., who, during 1917-18 had been the U.S. Naval Air Attaché in London, and was exceptionally highly regarded. In 1939 he was Rear-Admiral commanding the Air Department of the U.S. Navy.

On May 15 all three left Trepassey for the Azores. Two were wrecked on the way,—without loss of life, because a large portion of the U.S. Navy was strung out along the course from Newfoundland to the Azores and from the Azores to Lisbon and from Lisbon to Plymouth and the crews of the wrecks were picked up.

The NC 4, commanded by Lieutenant-Commander Reid, U.S.N., reached Horta, in the Azores, 15 hours after leaving Newfoundland. It reached Lisbon on May 27 after a long

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stop at the Azores for overhaul, and reached Plymouth on May 31. This was the first aerial voyage across the Atlantic.

The members of the crews of all three boats were duly welcomed by the Under-Secretary of State for Air, Brigadier-General Seely, and by H.R.H. the Prince of Wales (later King Edward VIII, and later Duke of Windsor), at the House of Commons.

On June 14 Captain John Alcock, D.F.C., R.A.F., with Lieutenant Arthur Whitten Brown, R.A.F., flew a Vickers Vimy biplane (two 375 h.p. Rolls-Royce motors) from Newfoundland to Clifden in the County Galway, Ireland, in 15 hours 57 minutes, thus winning the 10,000 guinea prize offered by the *Daily Mail* for the first non-stop flight across the Atlantic. On the recommendation of the Air Ministry the King appointed both to be Knights of the British Empire (Civil Division).

I mention these two events here because ultimately the Air Ministry in general and the Department of Civil Aviation in particular had a great deal to do with the development of trans-Atlantic flying.

The first flight by an airship across the Atlantic was that by His Majesty's Airship R.34, already mentioned. It left England on July 2 at 02.48 hrs., commanded by Major E. H. Scott, A.F.C., with Brigadier-General Edward Maitland, who was Chief of the Airship Department, as passenger, and a crew of twenty-nine. It reached Minneola, Long Island, on July 6 at 15.00 hrs. with only enough petrol left for 40 minutes' more flying.

An interesting point here is that as none of the American personnel who were told off to handle the ship on the ground knew anything about airships, big or little, an officer of the R.34 descended by parachute before the ship came to ground, and took command of the American handling parties, after instructing their officers what the skipper of the R.34 wanted done.

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The ship left Minneola at 15.55 hrs. on July 9 and landed at Pulham, Norfolk, on July 13 at 18.57 hrs.

This historical event was definitely the affair of the Air Ministry because the ship belonged theoretically to the military branch of the Air Ministry.

Quite an important event in the History of the Air Ministry and of the Royal Air Force occurred on August 4, 1919, when the new rank-titles of the R.A.F. came into force. Even to-day the ordinary person, especially anybody who has been brought up among Navy or Army people, has considerable difficulty in placing rightly the ranks of Air Force officers. Possibly the easiest way to remember them is to start from the lower ranks.

There are certain complications concerning precise seniority in rank which is confusing in the lower levels much in the way as there is that curious complication about when a Lieutenant-Commander R.N. is senior to a Major in the Army. But roughly here is the order of seniority:

Pilot Officer = Midshipman = Second Lieutenant
Flying Officer = Sub-Lieutenant = First Lieutenant
Flight-Lieutenant = Lieutenant = Captain
Squadron Leader = Lieutenant Commander = Major
Wing Commander = Commander R.N. = Lieutenant-Colonel
Group Captain = Post-Captain R.N. = Full Colonel
Air Commodore = Commodore R.N. = Brigadier
Air Vice-Marshal = Rear-Admiral R.N. = Major-General
Air Marshal = Vice-Admiral R.N. = Lieutenant-General
Air Chief Marshal = Admiral R.N. = Full General
Marshal of the R.A.F. = Admiral of the Fleet = Field-Marshal

These rank-titles may best be remembered by comparing them with Naval ranks and then comparing those again with Army ranks.

In September 1919 an announcement was made that the Government had decided to discontinue the building of air-ships. Consequently the great firms already mentioned who

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were engaged on airship work dismissed their carefully trained personnel. Nevertheless, as already mentioned in the section of this book which deals with the organization of the Air Ministry, an Airship Research Department was still maintained at the Air Ministry until 1939. In late years its duty was merely to discover and to study what was being done with lighter-than-air craft in other countries—which meant Germany, the United States, France, Italy, Russia, and Japan—roughly in that order of importance.

A new activity of the Air Ministry was manifest in October 1919 during a railway strike of some magnitude. An official civil air mail service was organized jointly by the Post Office and the Air Ministry. These posts flew between London and Bristol, Birmingham, Manchester, Edinburgh, Glasgow, Newcastle, and other important cities. A number of civil aeroplanes were used on the services and 54 R.A.F. machines as well. The service ceased along with the strike on October 6. Vickers Ltd. operated a private air-mail service between their offices in London and their works in Barrow-in-Furness.

In November 1919 Major-General J. E. B. Seely, who had been Under-Secretary of State for Air while Mr. Winston Churchill combined the offices of Secretary of State for War and for Air, resigned his office as a protest against the political combination of the War Office and the Air Ministry under one politician. Apparently the protest had good effect because never since then has the Air Ministry been subordinated to any other Department.

The first official air-mail service between London and Paris began on November 11, 1919,—certainly not at the best time of the year from the weather point of view for a young and very experimental service. The contract was given to Mr. Holt-Thomas's Air Transport and Travel Ltd., which had been running a passenger service since the Summer. There is interest in noting that during the eleven weeks' life of this service 149 out of 166 scheduled flights had been accomplished. Eight were abandoned because of bad weather, six were

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interrupted by weather, and only three failed from mechanical defect.

A notable flight which was not directly connected with the Air Ministry but pioneered an air route which has eventually become practically Air Ministry property, began on November 12, when a Vickers Vimy biplane (two 375-h.p. Rolls-Royce Eagle motors), piloted by Captain Ross Smith, A.F.C., D.S.C., R.A.F., with his brother Lieutenant Keith Smith, Sergeant Bennett, and Sergeant Shiers as crew left Hounslow for Australia.

They reached Cairo on November 18, Delhi on November 25, Calcutta on November 28, and Rangoon on November 30. They reached Bangkok on December 1, Singora on December 2, Singapore on December 5, Kaligatti, West Java, on December 6, Sourabaya on December 9, and Fort Darwin, Australia, on December 10.

The brothers Smith were made Knights of the British Empire (Civil Division) and the two N.C.Os. were awarded the Air Force Medal.

The flying time for the whole journey was 124 hours and the journey took twenty-nine days.

CHAPTER SEVENTEEN

Progress and Otherwise in 1920

The Aircraft Disposal Co., Ltd.—Mysteries of the Scrap-Heap
—Wholesale Demobilization—Cleaning up the Mad Mullah
—The Air Ministry's First Private War—Daimler Airway—
—The Croydon Airport—London—Capetown, First Flight—
Lord Londonderry's Office—The Wakefield Scholarships—
The Cadet College, Cranwell—Prohibition of Flying to India
—The First R.A.F. Display—The R.A.F. Benevolent Fund
—The First Post-War Aero-Show—The Air Ministry's
Civil Air Transport Competition—The First Air Conference,
Open to the Public—Low-Water Mark—a 10 Per Cent Air
Force—The R.A.F.'s. World Wars of 1920

ALTHOUGH 1920 was the worst year in the history of Aviation whether one considers its financial effect on the Aircraft Industry or the progress of the Royal Air Force as such, there were certain events during the year which were very important.

On January 27 in that year the announcement was made that aircraft equipment formerly the property of the R.A.F. to the value of £5,700,000 had been sold to the Aircraft Disposal Co. Ltd., a concern which was jointly organized by Mr. Godfrey Isaac, who was a brother of Lord Reading, and Mr. Handley Page. Although this deal was much criticized it turned out well at the finish, because the taxpayers got back several millions of pounds from what, but for the skilful handling of the sales, would have been scrap metal and timber.

As it was, a great deal of usable material had to go onto the scrap-heap. Orders were given that such stuff was to be broken up before it was sold, but many an aeromotor, worth £500 or so, which afterwards did good service in joy-riding, was sold, as one buyer said, for "£5 to the company as scrap metal and £5 to the chap in charge of the scrap-heap for *missing* it with the hammer."

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The Air Minister announced on January 12, 1920, that, up to January 3, 23,087 officers, 21,558 cadets (that is to say prospective pilots), and 227,229 Other Ranks of the Air Force had been demobilized. That was out of 30,000 officers and 300,000 men, so one sees that the figure was actually worse than that which had been estimated in the previous year. In fact as a Fighting Force the R.A.F. had ceased to exist, except for a squadron or two on the North-West Frontier of India and one or two Squadrons which were attached to the combined Navy and Army Forces which were operating against the Russian Bolsheviks from the Arctic Ocean between Murmansk and Archangel, and from the Black Sea in support of General Denikin and later of General Wrangel.

An historical announcement was made officially on February 8, 1920, when the *London Gazette* announced that a mixed force of all arms under Group Captain Robert Gordon, D.S.O., R.A.F. (one of the officers of the Royal Marines who had joined the R.N.A.S. in its early days), with Wing-Commander Frederick Bowhill as his Chief of Staff, had defeated and utterly broken the army of the so-called Mad Mullah of Somaliland late in 1919. The Mad Mullah had defied detachments of the British Regular Army and the Anglo-Egyptian Soudanese Army and the various Police Forces concerned for fifteen years. He was completely cleaned up by the use of Air Power in a few weeks, and the tribes which had suffered from his depredations for so many years were henceforth able to live peaceably with no more disturbance than is provided by normal inter-tribal raids. This was the first triumph of the R.A.F. in the various campaigns which have been conducted entirely under Air Ministry control. One might say that it was the Air Ministry's first private war.

The lamentable reduction of the Air Force was again shown when the Air Estimates came up before the House of Commons on March 8, 1920. The personnel had been reduced to 29,730 officers and men, exclusive of those serving in India. The total sum demanded was £20,942,930 as against nearly £54,000,000

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in 1919. Of this sum only £894,540 was allocated to Civil Aviation as against £3,000,000 in the previous year.

A further announcement about the disposal of the Air Ministry's surplus War stock was made on March 19, when the fact was made known that the Aircraft Disposal Co. Ltd. had taken over the whole of the Air Ministry's surplus stock of a value vaguely of £100,000,000, in return for £1,000,000 in cash to be paid in instalments, plus half the profits if any. The deal was arranged by the Imperial and Foreign Corporation and the selling agency was made over to Handley Page Ltd.

Civil Aviation suffered a bad blow about this time when on March 24 Mr. Holt Thomas announced that he had resigned from the Directorate of the Birmingham Small Arms Company, which previously had absorbed the Aircraft Manufacturing Co. Ltd. and Aircraft Transport and Travel Ltd. The other Directors of that concern decided to discontinue the design and construction of aircraft and the operation of the air line. The decision was, no doubt, influenced as much by the terrific financial slump which affected the whole world—as always happened after the false boom which follows every great war—as it was by personal disbelief in the future of Air Transport.

The remnants of the air transport concern were taken over by Daimler Hire Ltd., the chief of which was Mr. Frank Searle, and the Daimler Airway was formed under the management of Mr. George Woods Humphery. This affair had a great influence on British Air Transport later on.

An event of historical interest, which affected the Air Ministry directly, was the taking over on May 28 of the Airport of Croydon in lieu of the Air Station on Hounslow Heath. Major S. T. Greer, R.A.F. ret'd., was appointed Civil Aviation Traffic Officer in Command.

Another historical journey of great importance was concluded on March 20 when Wing-Commander van Ryneveld, and Flight-Lieut. Quintin Brand, who had left Brooklands for Capetown in a Vickers Vimy bomber on February 4,

arrived at Capetown in a D.H. 9 (Siddeley Puma motor). It had been lent to them by the South African Government so that they might fly from Bulawayo where they had crashed irretrievably their Vimy biplane. It had practically been rebuilt several times on the way. Thus they were the pioneers of the second great air route of the British Empire.

Some of these events, although they were not directly concerned with the Air Ministry at the time, had reactions which eventually affected the Air Ministry quite considerably.

On April 3, 1920, the official announcement was made that the Right Honourable the Marquess of Londonderry, K.G., had been appointed Under-Secretary of State for Air in place of Major G. C. Tryon. This was the first appearance in air politics of a nobleman who fifteen years later became Secretary of State for Air. Throughout his career he showed a keen appreciation of the importance and the possibilities of Air Power and did his utmost to assure the supremacy of Great Britain in the air. Though not a young man he insisted on learning to fly, and became a competent all-round pilot.

In the same month Sir Charles Wakefield, later Lord Wakefield of Hythe, who is well known for his generosity to public charities, and has acquired the personal affection of many people by his private and unadvertised generosity, offered a number of annual scholarships for competition among the sons of impoverished parents as candidates for R.A.F. Cadetships at the new Air Force College at Cranwell. These scholarships have brought into the R.A.F. a number of excellent officers who, but for Lord Wakefield's generosity, could not have afforded to join the R.A.F. as Officer Cadets.

On May 11 the noble Lord the Marquess of Londonderry had the distinction of introducing into the House of Lords the Air Navigation Bill which after it became an Act became the basis of all the world's Air Law.

Those who have since journeyed peacefully by air lines of various nations between Europe and India or China or Australia may get some idea of the state of affairs overseas at this time

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from the fact that on May 13, 1920, the Air Ministry issued an order prohibiting flights to India on account of the state of war in Syria and Mesopotamia. One effect of this Order was to put an end to the competition for a £10,000 prize which had been offered by the *Daily Express* newspaper early in the year for a flight to India and back.

The first R.A.F. Tournament, which became known later as the R.A.F. Pageant and later still as the R.A.F. Display, took place on July 3, 1920. Some 60,000 people were present and saw the finest display of flying ever given in this country. The Royal Air Force Benevolent Fund benefited by some £7,000.

Year by year thereafter the display was held until 1937. In all that time there was only one fatal accident at the Display, though several pilots were killed rehearsing for it at one time or another.

The crowd which came to see the Display in later years amounted to some hundreds of thousands, and proved that British tax-payers understood the value of Air Power to the British Empire, and their interest in the latest war machines of the air. Incidentally year by year the R.A.F. Benevolent Fund, which looks after the families of R.A.F. officers and men who have fallen on bad times, and helps both officers and men themselves, acquired some hundreds of thousands of pounds altogether.

The first Aero-Show to be held in England since 1914 opened on July 9, 1920. A competent scientific authority at the time demonstrated in an article that, despite war extravagance, the cost of flying the aeroplanes exhibited at this Show was precisely half that of the 1914 types. Fifteen aircraft firms showed twenty-seven aeroplanes and there was a vast display of motors and accessories, which was made more valuable by many interesting exhibits by the Technical Department of the Air Ministry.

The attendance of the public was small. The fact deserves to be noted, because although the Air Ministry has been more

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talked about and more criticized than any other Ministry, and although people rolled up in their hundreds of thousands to the R.A.F. Displays, only a few thousands have ever gone to Aero-Shows. The reason seems to have been that Aero-Shows have never been open to the public at those hours when the great mass of people are free to go and see the machines in which so many of them, especially the younger people, are so keenly interested. The Ministry has always given such Shows its support, and certainly cannot be blamed.

For many months before the Show several of the leading aircraft firms had been building aeroplanes specially to take part in the Air Ministry Competition for large and small Civil Air Transport machines which began officially on August 3 at the R.A.F. Aeroplane and Armament Experimental Station at Martlesham Heath.

Handley Page Ltd., Vickers Ltd., and a firm since deceased called the Central Aircraft Co. Ltd. sent machines for the large class, which meant embryo air liners. Competitors in the small class were the Austin Company, Beardmore & Co. Ltd., the Bristol Aeroplane Co. Ltd., the Westland Aircraft Works, A. V. Roe & Co. Ltd., and the Sopwith Aviation and Engineering Co. Ltd.

The list of firms is interesting in the light of later developments. The Austin Co. went out of the aircraft business and came back when the Shadow Factory scheme was started in 1937, Beardmores went out and have not come back. The Westland Works and A. V. Roe & Co. Ltd., commonly called the Avro Company, are still in the forefront of British firms. And the Sopwith Aviation and Engineering Co. Ltd. has a direct descendant in the Hawker Aircraft Ltd., which is the key firm of the great Hawker-Siddeley group. The Sopwith Company actually went into liquidation in September of 1920.

Apparently the Air Ministry thought so little of the aeroplanes which were entered in the large class for this competition that the First Prize was not awarded. The Second Prize, of £8,000, was given to Handley Page Transport Ltd. for the

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W.8 (two Napier Lion motors) and the Third, of £4,000, to the Vickers Vimy (two Rolls-Royce Eagle motors). In the small class the First Prize, of £7,500, was given to the Westland Limousine (450-h.p. Napier Lion motor); the Second of £3,000 to the Sopwith with a Wolseley Viper motor; and the Third, of £1,500, to the Austin Kestrel (160-h.p. Beardmore motor).

The Air Ministry also held a competition for amphibian aeroplanes, that is to say aeroplanes which could alight on and take-off from either land or water. The competitors were a Vickers Viking flying-boat, a Supermarine flying-boat and a Fairey float machine. The Vickers Viking (Napier Lion motor) was awarded the First Prize of £10,000. The Second Prize, of £8,000, went to the Supermarine flying-boat (Rolls-Royce Weevil); and the Third, of £2,000, to the Fairey float biplane (Napier motor).

Another sign of the Air Ministry's wishfulness to encourage Civil Aviation was seen in the first Air Conference, which was held in London on October 12. Sir Frederick Sykes, Controller-General of Civil Aviation, read the first paper. At the inaugural lunch Mr. Churchill, for the Air Ministry, said that this time had been selected because Parliament was not sitting and there would be more room in the papers to pay attention to air affairs. Another suggestion was that the Air Conference was a good Silly Season topic. Other papers were read by Mr. H. White-Smith (later Sir Henry), Chairman of the S.B.A.C.; Sir Edward Ellington, Director-General of Supply and Research; Captain F. S. Barnwell, the designer of the famous war-time Bristol Fighter; Sir Trevor Dawson, the Chairman of Vickers Ltd.; and by Sir Hugh Trenchard, the Chief of the Air Staff. Sir Hugh's paper was of great importance for it contained much information about the future of the Royal Air Force.

In the House of Commons on November 26 Mr. Churchill stated that as at October 1 the strength of the R.A.F. was 2,812 officers and 23,862 men. Thus the Air Force had been reduced to less than one-tenth of its war-time strength.

The last public act of the Air Ministry in 1920 was the issue by the Department of Civil Aviation of its half-yearly Report from April 1 to September 30. This showed only 129 renewals of civilian pilots' licences and 90 renewals of Ground Engineers' licences. The value of goods imported by air was £376,606 and the goods exported £168,300.

A well-known writer on Service Aviation of the period, the late Major W. E. de B. Whittaker, at the end of the year wrote: "Throughout 1920 the R.A.F. has been at war in Russia, Turkey (in Europe and Asia), Mesopotamia, Somaliland, Arabia, the Sudan, the Indian North-West Frontier, and in Ireland. Week by week official communiqués were published, and where all recorded so much gallantry and good work it would be invidious to select any for quotation. It must suffice to say that in all war areas the R.A.F. has maintained the highest tradition of the Army which gave it birth.

"At home the R.A.F. has already lived down all reproaches which were made against it during the War and after the Armistice. The quality of its flying is as high as ever, and in all other respects it has far surpassed its earlier levels. The smartness of the 'other ranks,' whether on pass or on parade, their keenness on ceremonial, and the superlative excellence of their march discipline, is at once evidence of the high quality and enthusiasm of the airmen and of the good feeling which they entertain towards their officers.

"The R.A.F. is the last and least of the King's Armed Forces, but in no other respect does it now yield pride of place to the sister Services."

Those words well summarize the R.A.F. at the end of its second year of disintegration and resurrection.

CHAPTER EIGHTEEN

The R.A.F's. Resurgence

"Control Without Occupation" in 'Iraq—New Specifications and Experimental Types—Keeping the Aircraft Industry Alive—Prestige of British Certificates—The Desert Mail (Cairo—Baghdad)—Subsidized Air Lines—Strike Duty Again—The Airship Question—The Breaking of the R.38

ALTHOUGH the year 1921 was one of the worst on record for commerce it was a good year for Aviation as things went in those days. The R.A.F. had found itself thoroughly. There was a story of a certain Senior Officer of the R.A.F. who was being questioned by a politician high up in the Cabinet on the subject of economies in the R.A.F. The politician suggested that too much money was being spent on the training of the other ranks in the Air Force. The officer pointed out that every man in the Air Force had to be a highly educated, highly trained craftsman.

"But," objected the politician, "do you mean to say that all those men I see walking about looking like soldiers are skilled craftsmen?" The officer looked at him reproachfully for a moment and replied: "Don't tell me that you have seen any of our people looking like *soldiers*!"

Thus the R.A.F. had already acquired a good conceit of itself. Further evidence was the fact that in its early days the best mechanics in the Flying Services came from the motor trade. In 1921 an indifferent craftsman in the R.A.F. was commonly told that he was only fit for the motor trade. Thus do we rise from our dead selves to higher things. And thus was the spirit built which has made the R.A.F. what it is to-day, the finest Air Force in the world.

Another gift to the R.A.F. (in 1922) was the handing over of the control of Mesopotamia, now called 'Iraq, to the R.A.F.

The R.A.F's. Resurgence

Sir Samuel Hoare had persuaded the Cabinet that in such a country as Mesopotamia, where neither British nor Indian troops could compete in mobility with the well-mounted Bedouin tribesmen who were preying upon the riverside cultivators, as they have done ever since the days of Cain and Abel, the best way of keeping the country quiet was to hand over the High Command to the Air Force.

He called this method of pacification "Control without occupation." A phrase which exactly describes the value of the Air Force in dealing with hostile tribesmen. Although it did away with the need for and expense of occupying the country, it kept the R.A.F. well occupied.

The honour of being the first Air Force Officer to have complete Military Command of a conquered country fell to Air Vice-Marshal Sir John Salmond, who held the Supreme Command in Mesopotamia for several years and brought the country into a state of peace such as it had never known since the time of Noah. Except for a few chronic rebels, such as Sheikh Mahmoud, in the Kurdish hills there were no serious operations to be undertaken either in the air or on land towards the end of Sir John Salmond's holding of the Command.

The Aircraft Industry was well treated by the Air Ministry in 1921. The Directorate of Research produced a number of specifications for new types of aeroplanes which showed an intelligent appreciation of the direction in which progress should be made. The Department even went to the length of ordering experimental civil air transport machines disguised as war machines with the idea of helping Civil Aviation when the English shopkeeper should awake to the possibilities of aircraft in business. In fact the Air Ministry, despite universal bad trade, provided the means by which aircraft manufacturers were able to keep their valuable design staffs together.

On the Civil Aviation side the combined efforts of the Licensing Department and of the Aeronautical Inspection Department had the result that British Certificates of Airworthiness for an aeroplane or a British Pilot's Licence for a

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man or a Ground Engineer's Licence on the mechanical side, already stood as high in the estimation of the world as did the A.I. at Lloyds Certificate among shipping. And the A.I.D. stamp on the various parts of an aeroplane or a motor became recognized as the equivalent of the British Hall-mark on gold or silver.

Another valuable piece of work done by the Air Ministry through the R.A.F. was the opening of a regular air-mail line between Cairo and Baghdad. The route was first surveyed by Air Vice-Marshal Brooke-Popham. Thereafter Group Captain Peregrine Fellowes supervised the ploughing of a track from the River Jordan to the Euphrates, so that the pilots would have something definite to follow across the desert. In those days navigation was not the strong point of Aviation.

In February 1921 Mr. Churchill left the War Office and the Air Ministry and became Minister for the Colonies, particularly in control of the Middle East. He was succeeded as Air Minister by Captain the Honourable Frederick Guest (since deceased) and Lord Londonderry was succeeded as Under-Secretary of State for Air by Lord Gorell.

The Air Estimates for 1921-22 were introduced, as his last official act, in the Air Ministry, by Mr. Churchill on March 1. The total amount was £18,411,000.

By that month practically all the cross-Channel air services had been suspended, for lack of money. And on March 10 Sir Frederick Sykes, as Contoller-General of Civil Aviation, met representatives of the Aircraft Trade to discuss subsidizing air lines. In the meantime the subsidized French air liners were carrying full loads of passengers at the equivalent of £6 per head for the Paris-London trip. Arrangements were at last made with the air transport firms and the service was resumed by Handley Page Transport Ltd. and Instone Air Lines.

On April 8 the Air Ministry issued a Notice asking former pilots of the R.A.F. to volunteer for strike duty against the triple alliance (Miners, Transport Workers, and Railway Workers). Far more pilots volunteered than could be used.

On May 30 Sir Frederick Sykes announced that unless financial support were forthcoming from commercial sources the whole of the airships which were being maintained at the expense of the Air Ministry would be demobilized, and the airship personnel discharged or distributed to other branches of the R.A.F.

At that time the R.38, the world's biggest airship, 2,700,000 cu. ft. capacity, was being built by the Air Ministry at the Royal Airship Factory at Cardington. This great airship shed had been built and used during the war by Short Brothers, the seaplane firm. Before it flew the R.38 was sold to the United States Navy and was called the Z.R.2—a back-handed compliment, seeing that the initials stood for Zeppelin Rigid.

In a general way there was considerable public feeling in favour of airships. In fact in July 1921 Mr. A. H. Ashbolt, Agent-General for Tasmania, put forward a scheme for an Imperial Airship Company, with a capital of £1,500,000, to operate an airship line between Egypt and Australia. Judging by the performance of the contemporary Zeppelin and its successors, such a line would have been workable at that time if it had been financially supported by the British and Australian Governments.

Unhappily on August 24 the R.38 broke amidships while doing trials over the Humber close to Hull. Commander Maxfield, with fifteen officers and men of the U.S. Navy who were seeing the ship through its acceptance trials, with Air Commodore E. M. Maitland and twenty-seven officers and men of the R.A.F. and Air Ministry, died in the accident. Air Commodore Maitland had been, as a Captain in the Essex Regiment, one of our earliest pre-War aeroplane pilots. He had turned to airships before the outbreak of war in 1914, and had served throughout the War in the lighter-than-air branch. After the War he became the chief proponent of airships, and his death caused practically the abandonment of this class of vehicle for some years.

CHAPTER NINETEEN

The Naval War

Sir Hugh Trenchard on an Independent Air Force—Navy's Attack—Admiral Lambert's Defence—The "Magna Charta" of the R.A.F.—The R.A.F. Staff College—A New Airship Scheme—The 1923 Estimates—the Beginning of reconstruction—The Reserve of Air Force Officers—The Auxiliary Air Force—The Hambling Committee—The British Aircraft Industry's Output (200 Machines) and the French (3,300)—The Imperial Air Transport Co., Ltd.—Short Service Commissions—Labour's Air Estimates—A Notable Increase in Squadrons—Mr. Snowden on Civil Servants—Lord Thomson on French Methods—Imperial Airways Ltd. Comes Into Being, 1924—The I.A.W. Board

DURING 1921 a certain animosity had been smouldering between the Admiralty and the Air Ministry. During the War 1914-18 many of the younger officers in the Navy had seen and understood the importance of Air Power at sea. The Senior Officers, in general, had failed to understand the significance of aircraft. But after the war, as older officers retired and the younger men were promoted, a strong feeling grew at the Admiralty that Naval Aviation was after all the affair of the Navy, and that the needs of the Fleet in the air could not be best served by carrying Flying Personnel and Technical Personnel belonging to the Royal Air Force in His Majesty's ships, whether they might be aircraft-carriers built specially to accommodate aeroplanes or ordinary cruisers and battleships fitted with catapults from which to launch aeroplanes.

Also the Navy's self-respect was touched by having its air work done by members of another service. Although the Royal Marines had started as soldiers carried on warships to enforce discipline among the pressed men in the lower decks, they had at last come wholly under the control of the Admiralty,

and the feeling arose that Naval flying should be done by Naval people.

In spite of the White Paper already quoted in the middle section of this book, in which Sir Hugh Trenchard had stated definitely that eventually aviators specially trained for Navy and Army work would belong to those Services, Sir Hugh, as Chief of the Air Staff, fought strenuously against handing over any part of the Royal Air Force to the Navy.

His reason, as he often stated, for his firm opposition to the splitting of the Air Force was that, if the Air Force were split between the Navy and the Army, air strategy and tactics as such would never be developed, because the pilots of the Fleet Air Arm would become entirely subordinate to the immediate needs of the Navy and would never get any farther than reconnaissance and a certain amount of bombing and torpedo-dropping. In the same way he objected that, if the land-going part of the R.A.F. were handed over to the Army they would never be anything more than army scouts and artillery observers and short-range bombers.

Sir Hugh was determined that before any part of the R.A.F. was handed over to the Senior Services the R.A.F. itself should be so large that it could carry on independent warfare without being subordinated in any way to the strategy and tactics of the other Services.

What might be described as the first shot in the great battle between the Navy and the Air Force was fired in the form of an article in the *Pall Mall Gazette* (now the *Evening Standard*) on January 5, 1922. It was advertised on posters which screamed "Chaos in the Air Force." The article appeared to have been written by a member of the staff of the paper at the instigation of some disgruntled officer in the R.A.F., to whom the writer of the article referred as "one of our highest authorities" and as "a distinguished officer." This officer was quoted as using such phrases as: "We can never work effectively," "We are the most technical Service," "We have no technical or professional Executive Department." The article contained many

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charges against the R.A.F., all centring round the suggestion that the R.A.F. ought to be split up.

Thereafter for a matter of ten years Sir Hugh Trenchard, as Chief of the Air Staff, had to waste a great deal of time which should have been devoted entirely to the R.A.F. to fighting this Naval campaign to split up the Air Force, which was supported overtly by a number of Admirals on the Retired List, and covertly by a number of serving Officers.

By strenuous personal efforts Lord Trenchard preserved the Air Force as one and indivisible until early in 1939, when the Air Force had been expanded till it was, and is, the biggest fighting machine of its kind in the world. The Air Ministry then agreed to hand over to the Navy such aeroplanes as were specifically designed to take-off from and alight upon the flying deck of a modern aircraft-carrier and would fold up and go down the lift into the aeroplane hangars below decks. It also included the catapult craft used on ships.

Much to everybody's surprise a strong defender of the R.A.F. in the Press appeared in Rear-Admiral Sir Cecil Lambert, formerly Director of Personnel at the Air Ministry, who had recently retired. He pointed out that there were practically no Naval officers who had any knowledge of airmanship, that this was in no way the fault of the Air Ministry. The Admiralty had been asked to lend or second a quota of officers each year for four years' training in Aviation. The Admiralty had refused the offer on the inadequate grounds that Naval officers could not be spared so long away from sea.

Admiral Lambert concluded: "Evidence is accumulating to show that the safety of this Kingdom must in the future chiefly depend on the Air Force, and they (the public) should not allow their judgment to be warped by the delirious screams of those, who, for diverse reasons, wish it were otherwise."

On March 16, Mr. Neville Chamberlain, Leader of the House of Commons, delivered the Government's ultimatum to the Naval agitators. He said: "These are the conclusions at

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which we have arrived. In the first place the Air Force must be autonomous in matters of administration and education.

"Second, that in the case of defence against air raids the Army and Navy must play a secondary rôle.

"Third, that in the case of military operations by land or sea, the Air Force must be in strict co-ordination to the general or admiral in supreme command.

"Fourth that in other cases, such as the protection of commerce and attacks on enemy harbours and inland towns the relations between the Air Force and the other Services shall be regarded rather as a matter of co-operation than of the strict subordination which is necessary when aeroplanes are acting merely as auxiliaries to other arms."

That settled the Navy's position for nearly seventeen years, and it may be regarded as the Magna Charta of the Air Force.

The Air Estimates for 1922-23 issued on March 17, showed a total of £15,666,500 against £19,782,967 in 1921.

In March 1922 a Civil Aviation Advisory Board was appointed by the Cabinet. Lord Gorell, U.S. of S. for Air, was Chairman, and on it were representatives of the G.P.O., the Air League, the British Chambers of Commerce, the Federation of British Industries, Lloyd's, the Royal Aero Club, the Royal Aeronautical Society, and the Society of British Aircraft Constructors. No after effects were perceptible.

One of the important events of 1922 was the formation of the R.A.F. Staff College. Air Commodore H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., was the first Commandant. He is now Air Chief Marshal Sir Robert Brooke-Popham and was Governor of Kenya at the declaration of War on September 3. It was opened on April 4 by Air Vice-Marshal Sir John Salmond.

There was a legend at the time that when the Air Council asked "Brookham," as he is always called by his contemporaries, to take the job of Commandant he refused. When he was pressed still farther he asked modestly whether he might see

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the names of the alternative possible appointees. He contemplated the list for a few moments and then said resignedly: "Well, I suppose I had better take it."

Also in April 1922 the Air Ministry considered an Imperial Airship scheme which was submitted to it by Lieut.-Commander Burney, R.N., later Sir Dennistoun Burney, M.P. Later on there will be something to say of Lieut.-Commander Burney's notable contribution to the development of airships. Captain Guest, the Secretary of State for Air, said in the House that Lieut.-Commander Burney's scheme was a notable improvement on previous propositions.

The war between the Admiralty and the Air Ministry entered another stage when the Committee of Imperial Defence, with Mr. Lloyd George as President, sat to consider the requirements of the R.A.F. and the representations made by the Admiralty and the War Office about the Air Units attached to the Navy and Army.

The next important move by the Air Ministry was the announcement on February 9, 1923, of the formation of the Reserve of Air Force Officers. These were to include all who served as pilots in the R.N.A.S., R.F.C., or R.A.F. during the War 1914-18; gentlemen qualified as civil pilots who had not previously held any Commission; officers who had served in the Technical Branch of the R.N.A.S., R.F.C., or R.A.F., and gentlemen who possessed the necessary technical qualifications.

The R.A.F.O. and the Auxiliary Air Force, which came into being soon after, between them remained the only Reserve of officer personnel until the formation of the R.A.F. Volunteer Reserve many years later.

In the early part of 1923 a Committee known as the Hambling Committee, appointed by the Secretary of State for Air, had been sitting to consider the question of subsidizing Civil Aviation, and in introducing the Air Estimates for 1923-24 on March 14, 1923, Sir Samuel Hoare announced the definite conclusion of the Hambling Committee that subsidies of some

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kind were necessary for a further period if Civil Aviation were to continue to exist.

The Air Estimates for 1923-24 amounted to £18,605,000. Sir Samuel made the startling statement: "In 1922 200 machines *both civil and military* were built in Great Britain, 3,300 in France," of which 300 were civil and 3,000 military. Sir Samuel demonstrated to the House how the Air Force could be expanded fourfold with little more than double the expenditure of that time. Of the R.A.F. he said: "We must keep it a *corps d'élite*, highly trained, well equipped, and capable, so far as possible, of quick expansion."

Sir Samuel Hoare's speech introducing those estimates may be taken as the beginning of the rebuilding of the Air Force, in spite of subsequent disarmament.

Right at the end of 1923, namely on December 28, the Air Ministry issued the text of an agreement between the President of the Air Council and the British Foreign and Colonial Corporation Ltd., the chief of which was the financier Mr. Szarvasy, who had seen the Dunlop Company through its financial troubles, providing for the formation of a firm to be called the Imperial Air Transport Co. Ltd.

Ever since its institution was first rumoured it had been commonly known as the "million pound monopoly company," which was to engulf the existing air lines. The first object of the firm was the acquisition of the businesses of Handley Page Transport Ltd., the Instone Air Line Ltd., the Daimler Airway branch of Daimler Hire Ltd., and the British Marine Air Navigation Co. Ltd. (allied to the Supermarine Company, Mr. Hubert Scott-Paine's affair).

Mr. Szarvasy and his co-financiers were introduced to this scheme by Mr. Holt Thomas, whose Aircraft Transport and Travel Ltd. had been closed down by the Directors of the Birmingham Small Arms Group soon after they closed down the Aircraft Manufacturing Co. Ltd.

This Imperial Air Transport Co. was the basis on which Imperial Airways Ltd. was formed.

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The first sign of the real expansion of the Air Force appeared in an Air Ministry announcement on January 3, 1924, when it announced that it wanted 400 officers for flying duty for the Short Service Commission scheme, and invited applications accordingly.

This Short Service Scheme has been much abused because, according to its critics, it took young men (eighteen to twenty-two) at the beginning of their adult lives, taught them to live like officers and gentlemen for five years, and then cast them on the world at the ages twenty-three to twenty-seven with a small gratuity and no visible means of support. But the fact remains that there have always been more applications for commissions than there were vacancies, and practically all the time-expired officers have made decent livings after leaving. In any case it was the only possible way of building up quickly the immense reserve of officer-pilots which the R.A.F. needed.

The first Air Estimates to be introduced by a Labour Minister were introduced by Mr. Leach, Under-Secretary of State for Air, on March 11. In an introductory Memorandum Brigadier-General Lord Thomson, Secretary of State for Air, drew attention to two new votes, those for Medical Services and for Educational Services.

There was an effective increase of £2,840,000 in the net estimate which allowed for the formation of eight new squadrons for Home Defence to be formed during 1924-25, which would bring the total to eighteen squadrons by April 1925.

We may assume that these Estimates were precisely as prepared under the lately defeated Conservative Government, and that in any case neither Government had very much to do with them because they were actually compiled by the permanent officials of the Air Ministry.

As Mr. Philip Snowden had wittily remarked at the annual dinner of the Civil Service Clerical Association: "Civil Servants have authority without Parliamentary responsibility, and Political Ministers have Parliamentary responsibility without authority. The authority of a Political Minister is a

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mere simulacrum of power compared with that of a permanent official."—Believe it or not.

Anyhow the fact remains that the first Labour Government did not reduce the Fighting Forces. Those who were in touch with such affairs at the time bear witness to the enthusiasm of the Labour political chiefs of the period for their respective Departments.

An interesting point in the Debate was an attack by the Duke of Sutherland, who had been Under-Secretary of State for Air under Sir Samuel Hoare, on Lord Thomson, the Secretary of State for Air. He held him up as having distinctly hostile military feelings towards France. And quoted him as saying in an American magazine *The Nation*:

"Perhaps the answer to the question put above is that the French Government will go on bullying a disarmed and helpless Germany as long as the world lets her and until the German people can save themselves. But the moment that they are resolutely tackled and made to face facts the French people will force their Government to be more circumspect."

That from a Labour Member of Parliament, albeit a Peer, reads curiously in these days. But remember, that was in 1924.

The coming into being of Imperial Airways Ltd. was announced officially on March 31, 1924. The Board of the Company was: The Right Honourable Sir Eric Geddes, G.C.B., G.B.E., Chairman; Sir George Beharrell, Kt., D.S.O.; Lieut.-Colonel Frank Searle (Managing Director); Lieut.-Colonel J. Barrett-Lennard; and Sir Samuel Instone, Kt.—Major J. W. Hills and Sir Herbert Hambling, Bart., were appointed by the Air Ministry as Government Directors. Major George Woods Humphery of Daimler Hire Ltd. and of its subsidiary Daimler Airway was appointed General Manager.

CHAPTER TWENTY

Innovation and Resuscitation

More Squadrons for the R.A.F. in 1925—Building up the Auxiliary Air Force—Regular and Auxiliary Organizations compared—The R.A.E. at Farnborough Again—Reviving Airships at Cardington—Sir Dennistoun Burney's Airship Guarantee Co.—India and Back by Sir Sefton Brancker and Mr. Alan Cobham—The Flying Club Movement—The Cambridge University Air Squadron—The Purposes of University Air Squadrons—The Estimates of 1926: An Unfulfilled Ideal—Strike Duty for the Third Time—Mails and the *British Gazette* by Air—Reorganizing Home Defence—Long-Distance Service Flying—Showing the Flag—The College of Imperial Defence (I.D.C.)—Sir Samuel and Lady Maud Hoare Go East by Air—Subsidizing the Flying Clubs—Lord Wakefield's Munificence

By 1925 Sir Samuel Hoare was back again as Secretary of State for Air, this time with Sir Philip Sassoon as Under-Secretary.

The gross figure for the Estimates for 1925-26 was £21,319,300 compared with £19,742,000 in 1924. Sir Samuel Hoare in his introduction pointed out that the present strength of the Air Force apart from Training Units was the equivalent of fifty-four Squadrons, including the Fleet Air Arm. And there were eighteen completely formed regular Squadrons for Home Defence. The project for the year was the formation of two more regular Squadrons, one special Reserve Squadron and four Auxiliary Air Force Squadrons.

That was the beginning of that excellent institution the Auxiliary Air Force. It differed from the regular Air Force in that officers and men are part-time citizen soldiers. But against that they have one immense advantage over the regular Squadrons of the R.A.F., that is to say an officer or a man belongs to one squadron so long as he is in the A.A.F.

The R.A.F. is not organized like the Army, in which a

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man's Regiment is his father and mother and all his relations so long as he is in the Service. It is organized rather like the Navy in that an officer or a man may serve in one squadron for a few months or a few years just as an officer or a rating in the Navy may serve in one ship for a time. Consequently the Navy and the R.A.F. do not acquire *esprit de corps*, they acquire rather *esprit de Service*.

In the Auxiliary Air Force, on the other hand, where people join a squadron and remain in it all through their service time, an officer or a man becomes highly enthusiastic about his own particular squadron—which becomes his hobby. As between squadron and squadron this leads, so to speak, to envy, hatred, malice, and all uncharitableness, but it also leads to intense keenness. Moreover, it leads to high efficiency because the men know their officers and the officers know their men, so that they become friends in a way which is impossible when all ranks are continually changing about. Also the pilots get to know one another and their idiosyncrasies in the air, and so are able to work together in a way which is bound to be useful in actual war.

Certainly at the R.A.F. Display at Hendon the A.A.F. Squadrons were unsurpassed by any of the regulars. And, in recent years, in which the Auxiliary squadrons have been equipped with the latest high-performance fighters, they have put up performances at the Empire Air Day shows—which have replaced the Displays—that have shaken the nerves of even war-seasoned Regular Officers of the R.A.F.

The Air Estimates of 1925 disclose interesting facts. There were then, in all, fifty-four squadrons, including those provided for the Fleet Air Arm and Coastal Defence. There were eighteen completely formed Regular squadrons for Home Defence and the programme for the forthcoming year included the formation of two more Regular squadrons, one Special Reserve squadron, and four Auxiliary Air Force squadrons.

The state of affairs in Arabia may be gathered from the fact that eight squadrons remained in 'Iraq. That was chiefly

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because of the Turkish threats to the Northern Frontier above Mosul. The desert tribes had been fairly well brought to order by then.

Another interesting point in the Estimates, considering that the R.A.F.'s. war with the Navy was in full blast, was that although Vote 3 (Technical Equipment, Experiment, and Research) showed a net reduction of £400,000, there was a grant from the Navy Vote in respect of equipment for the Fleet Air Arm and therefore the net increase for equipment was £763,000.—The Navy was so keen on developing its Air Arm that it was ready to pay the R.A.F. handsomely for providing the material.

Sir Samuel Hoare, introducing the Estimates, remarked: "There is a marked tendency for aircraft to advance in power and complexity and consequently also in cost."

Another important point was his statement that the considered policy of the Air Ministry was to reserve the Royal Aircraft Establishment at Farnborough for experiment and research, and not to employ it on the normal work of production for the Air Force.

Sir Samuel Hoare also disclosed several interesting facts about airships. He said that the Royal Airship Works at Cardington and the Airship Section at Pulham, which had been the great operating centre of the big airships during the War, were reopened in July 1924. The R.33, a sister ship of the R.34 which flew the Atlantic in 1919, had been reconditioned and fitted with special recording instruments and would do a series of experimental flights. The R.36 was being reconditioned at Pulham for an experimental flight to Egypt. The shed at Cardington was being enlarged with a view to the construction of a new Air Ministry ship, and an initial payment of £150,000 had been made to the Airship Guarantee Company, on account of the airship they had contracted to build. The total provision for airships amounted to £500,000.

That Airship Guarantee Company was a concern originated by Sir Dennistoun Burney, Lieut.-Commander R.N.

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(retd.), who had received a large sum of money as his reward for inventing the Paravane, which did such good work in cutting the cables of floating mines during the War. He had persuaded Vickers Ltd. to come in on his airship project, and they built a highly satisfactory airship at Pulham. This ship was afterwards numbered the R.100, and the Air Ministry ship at Cardington was numbered the R.101. Their fate under Air Ministry supervision will be recorded hereafter.

There is interest in recording here the fact that on March 17, 1925, Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation, piloted by Mr. Alan Cobham (now Sir Alan), with Mr. Elliott as engineer, landed at Croydon in a D.H.50 (Siddeley Puma motor) after flying to India and back. Sir Sefton thus again demonstrated his belief that Chiefs of Departments should have practical knowledge of the matters which they administrate. By this voyage he acquired a personal knowledge of the projected air-line to India. At the end of the month Imperial Airways Ltd. had completed its first year of existence, but their services had not projected beyond Europe.

During 1925 a movement grew, thanks to intelligent encouragement by the Air Ministry, which had far-reaching effects. This was the growth of the Flying Club movement.

It originated from the gliding competitions at Itford Hill in 1922. This was followed by competitions for light aeroplanes in 1923 and 1924 for which the Air Ministry had given prizes on the recommendation of Air Vice-Marshal Sir Geoffrey Salmond, who was then Air Member for Supply and Research. These competitions had produced a number of freak aeroplanes to win the prizes, but the net result was the production of highly successful and practical non-prize-winning machines by an old firm, A. V. Roe & Co. Ltd., and a young firm, The De Havilland Aeroplane Co. Ltd. When one recalls that Capt. Geoffrey de Havilland was one of the pioneers of 1908 and that A. V. Roe & Co. Ltd. was a pre-War creation one sees how much experience is worth. No young genius

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appeared among aircraft designers at that period to produce a light aeroplane which was a commercial proposition.

From these activities grew the Flying Club movement which was also heartily encouraged by the Air Ministry. The first clubs to be formed were the London Aeroplane Club, the Lancashire Aero Club and the Newcastle-upon-Tyne Aero Club. Later these increased vastly in numbers.

Another interesting move during 1925 was the establishment of what was then called the Cambridge University Air Unit. This was the first of what became a number of University Air Squadrons. The idea of these University Squadrons originated at Cambridge among a number of wartime Air Force officers who went to the University after the Armistice to do courses in engineering. The movement at Cambridge was led by Flight-Lieut. W. Howard Williams, who persuaded Sir Geoffrey Butler, since deceased, M.P. for Cambridge University, to put the matter up to the Air Ministry. Sir Hugh Trenchard had attended a dinner at Cambridge before addressing the Cambridge Union Society on the importance of air defence, and his visit probably marks the beginning of the penetration of the Cambridge proposition into the Air Ministry, and its penetration into the philosophy of the University Authorities.

The University of Oxford formed an Air Squadron a year or so afterwards and London University followed suit a good many years later.

The idea of these University Air Squadrons was to encourage air-minded undergraduates to take an active interest in Aviation, so that they might some day either be of technical use to the Aircraft Industry or at any rate spread the Gospel of Aviation in whatever profession they might choose to decorate, and so indirectly to the Air Force. Great care was taken to assure the University Authorities, and those who stood *in loco parentis* to the undergraduates, and their real parents also, that these so-called squadrons had no bellicose intent. They were to be purely of academic interest. Their Commanding

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Officer, who was a Wing-Commander, and therefore of impressive rank, was not called a C.O., he was officially called the Chief Instructor. In fact the whole scheme was an excellent example of our English way of persuading our consciences that things are not as they are.

Gradually special concessions were made to members of the University Air Squadron who wished to join the R.A.F. University candidates were given additional seniority when they joined the R.A.F.

At first members of squadrons were not allowed to fly in term time, because the University Authorities did not like to take the responsibility of their being killed in accidents. Later, arrangements were made with the R.A.F. aerodromes nearest to the Universities that members of the squadrons should be allowed to visit the aerodrome and add to their technical knowledge the experience of flying. Later again the Air Ministry allocated elementary training machines to those aerodromes for members of the squadrons.

Still later training machines of more advanced type were allocated to the squadrons. And eventually they became thoroughly efficient training establishments which provided officers of a particularly good type to the R.A.F.—as one might expect of men who had the privilege of being educated at our greater Universities.

The Air Estimates of 1926 were not very encouraging. In his introductory memorandum Sir Samuel Hoare said, with obvious regret: "While the gradual growth of the Air Force for Home Defence continues, the actual rate of expansion has decreased. This is a consequence of a decision of His Majesty's Government to relax, in view of the International and financial situation, the efforts which have hitherto been made to complete the authorized programme at the first possible date."

The gross total was £20,864,500 against £21,319,310 for 1925.

He explained that this decision related only to the rate of progress, not to the strength to be eventually attained, and

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that it was open to review in accordance with the International situation. But the unfortunate fact remains that in the succeeding ten years the Air Force never did catch up with "the strength to be eventually attained."

During the great transport strike in May 1926 the Air Ministry took unusual action in using Air Force craft for newspaper transport. The big slow bombers of the period were used to fly the official *British Gazette* from London to the North, and supplies of the paper which were taken down by car to the air station at Calshot were flown to Plymouth in flying-boats. Incidentally the bombers mostly flew at night and delivered their loads of news about dawn. Some 80,000 miles were flown with newspapers during the strike and about 45 tons of mail and papers were carried.

Also R.A.F. fighters, mostly manned by Reserve pilots left over from 1918, were used to patrol the railway lines and were armed with live ammunition with which to shoot up anybody who was found interfering with the track.

The one important innovation in 1926 was the reorganization of Home Defence which took effect from April 1 when a new Command, designated the Air Defences of Great Britain, and consisting of all Units and Formations of the Home Defence Force, came into existence under the Command of Air Marshal Sir John Salmond.

This Command included three subordinate Commands, the Bombing Area under Air Vice-Marshal Sir John Steel, the Fighting Area under Air Vice-Marshal H. R. M. Brooke-Popham, and the Special Reserve and Auxiliary Air Force.

The Air Ministry also introduced a new policy in 1926 when it organized a number of long-distance flights by Service Formations, by way of showing the flag, and demonstrating what the R.A.F. could do. The first of these was a flight from England to the Cape and back under Wing-Commander G. W. H. Pulford. The machines were Fairey IIIDs. Another cruise was to various ports in the Mediterranean, another was round a great part of the English coast. These were done in

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Supermarine Southampton flying-boats. Yet another was from Cairo to Aden and back in Vickers Victoria troop-carriers.

These methods of showing the flag were highly efficacious, and they showed the mobility of the Air Force and the possibility of reinforcing our Air Force defences overseas.

A voyage which affected the Air Ministry directly took place at the end of December 1926 and at the beginning of 1927, when Sir Samuel Hoare, Secretary of State for Air, his wife the Lady Maud Hoare, and Air Vice-Marshal Sir Geoffrey Salmond, who had been appointed to command the R.A.F. in India, flew from Croydon in a De Havilland Hercules (three Bristol Jupiter motors) on December 26 and arrived at Delhi on January 8. It was the first time a Secretary of State had journeyed so far by air. They were accompanied throughout by Mr. George Woods Humphery, General Manager of Imperial Airways Ltd.

During 1926 also the Air Ministry evolved a scheme for subsidizing the various flying clubs. Unofficially the hope was that the clubs might become a source of supply for future pilots for the R.A.F. But the numbers of old men, women, and children, and of the maimed, the halt, and the blind who joined the clubs soon exposed the fallacy of that idea. The official excuse for subsidizing the clubs was that they might become centres of aeronautical thought and action all over the country, which by increasing the psychological momentum among the people would help to make the nation air-minded, and would persuade the taxpayer to stand the cost of a big Air Force. In fact, as a writer of the period remarked, the flying clubs were very much more little bands of apostles among the heathen than serious sources of supply for the R.A.F.

Nevertheless, the success of the flying clubs later on became the foundation of an intensive system of flying training, and the credit for starting the club movement must go to Air Vice-Marshal Sir Sefton Brancker and his able *aides* of the period, Lieut.-Colonel F. C. Shelmerdine (now Sir Francis) and Lieut.-Colonel Ivo Edwards. They did everything possible

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to make things easy for the officials and members of the clubs, and were amiably blind to various infringements of regulations and agreements.

Although he has had nothing to do with the Air Ministry officially I feel that I must record here the valuable work which was done round about this period and has been done since by Sir Charles Cheers Wakefield, now Lord Wakefield of Hythe. He made himself a veritable godfather to the clubs. He has presented aeroplanes, generally the first for each club, to a number of clubs here and in the British Dominions overseas and in the Colonies. And he contributed in hard cash to the funds of many of them.

CHAPTER TWENTY-ONE

Imperial Co-operation

The Imperial Defence College—Cut Costs, Increased Output in the 1927 Estimates—Ottawa Promises—Interchange Between Dominions, Singapore, Hong Kong, Shanghai—Flying-Boats Around Australia—Boats in the Baltic—The Schneider Trophy Contest at Venice, September 1927—Importance of 1928—Sir John Salmond Lent to Australia—The R.A.F. Takes Over Aden—The Zaidi Imam Wawa of Sana—The Wahabi Akhwan in Arabia—Sir Philip Sassoon Goes East—Multiplied Air Displays—Auxiliaries and Reserves in Annual Air Exercises—Evacuating Kabul—Fatal Accidents in the R.A.F.

A GOVERNMENT move which influenced the R.A.F. considerably was the formation in 1926 of the College of Imperial Defence which was actually opened on January 1, 1927. Since then it has been commanded in turn by officers of the three Fighting Services. An officer of the R.A.F. was appointed as instructor on the first course and four officers of the R.A.F. attended the course.

The Air Estimates for 1927-28 showed another cut of about half a million. But in spite of that Sir Samuel Hoare had much that was good to report. On this point *The Times* of March 11, 1927, deserves high commendation for a remark about the Air Minister. It said: "Sir Samuel Hoare has all the scrupulous precision which he was able proudly to ascribe to-day to British aeroplane engines, and like them on their great Imperial flight last year, he went through the long journey of his estimates 'purring like a kitten.'"

The gross total was £19,986,400 against £20,864,500.

Sir Samuel announced with justifiable pride that the strength of the Air Force was being increased nearly 10 per cent with a reduction of 3 per cent in the cost. Secondly, old machines

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were being replaced by new types. Thirdly, there was a reduction of nearly £750,000 in the cost of defending the Middle East.—That was because of Sir Samuel's policy of control without occupation.

He warned the House that the defence programme would involve increased expenditure in future years. Neither he nor any Member of the House realized what that expenditure would become between ten and twelve years later, even reckoning on the basis of the War 1914-18.

He also announced that the principle of co-operation between the various parts of the British Empire had been fully accepted at the Imperial Conference the previous year, and that some time during the next two years an Air Conference would be held at Ottawa at which the Government of the Empire would be represented. Further projects included the interchange of flying personnel between the Air Forces of the Empire, and airships and aeroplanes to fly from Empire capital to Empire capital without stopping in foreign territory. He emphasized the fact that Air Power is a concentrated force rather than a collection of isolated fragments. He added that in this matter air policy greatly resembles sea policy, so air strategy should be directed towards organizing Imperial air routes.

Sir Samuel referred to the provision in these Estimates for landing-grounds on the route to Singapore and maintaining a flight of flying-boats in Far-Eastern waters, one of whose duties would be to co-operate with the Royal Australian Air Force.

The activities of the R.A.F. in 1927 were notable. A Command known as the R.A.F. China was formed with headquarters at Hong Kong under Group Captain E. D. M. Robertson, D.F.C., who was styled Fleet Aviation Officer to the Commander-in-Chief, China. The Command included units of the Fleet Air Arm in His Majesty's Aircraft Carriers *Hermes* and *Argus*, in H.M.S. *Vindictive* and in H.M.S. *Enterprise*, and at Kai Tak aerodrome, Hong Kong. That was at the end of January.

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In April an Army Co-operation squadron under Squadron Leader William Sowrey, D.F.C., A.F.C., went out to join the Shanghai Defence Force.

In October 1927 the Far-East Flight under Group Captain H. M. Cave-Browne-Cave, D.S.O., D.F.C., left Plymouth for a 23,000-mile cruise, which included a voyage round Australia and up to Japan before taking up their regular station at Singapore. The flight was equipped with Supermarine Southamptons (Napier Lion motors).

In September 1927 an R.A.F. formation undertook a cruise of the Baltic ports. The flying-boats consisted of a Blackburn Iris, a Short Singapore, a Vickers Valkyrie, and a Supermarine Southampton. Sir Samuel Hoare accompanied them in the Iris as far as Copenhagen.

In October 1927 a flight of three Fairey IIIFs left Cairo under Wing-Commander F. W. Stent to fly to Kano in Nigeria. Only one completed the programme because of accidents. But the effect was good, and it was an important pioneer flight.

The Air Ministry's awakening to the importance of showing the flag and keeping our end up generally was shown still further by the fact that a team of R.A.F. pilots flying float seaplanes, designed and built at the Air Ministry's expense, competed in the International Contest at Venice for the Schneider Trophy on September 26, 1927. It was won by Flight-Lieut. Webster in a Supermarine S.5 (Napier motor). Hitherto British competition in the Schneider Contest had been left to private enterprise.

During the year 1927 Air Marshal Sir John Salmond was lent by the Air Ministry to the Government of the Australian Commonwealth so that he might examine the organization of Australian Air Defence and advise the Australian Government thereon.

An interesting point is that at December 1927 there were 256 N.C.O. pilots in the R.A.F. Originally the idea had been that all pilots should be officers. A number of N.C.Os. had

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distinguished themselves as pilots during the War 1914-18 and had been given Commissions. But only some ten years after the war was any considerable encouragement given to N.C.O. pilots.

The year 1928 was very important in the history of the Air Ministry and considerable progress was made although the Estimates were again cut—£19,135,100.

During 1928 quite a considerable war was waged in Arabia against the Wahabi Akhwan, which means the Brotherhood of the Wahabi sect, of which King Ibn Saud is the chief. These fanatical brethren insisted on preying on the Southern 'Iraqi cultivators, who seemed to them to be slack in their religion and too well supplied with desirable goods.

Early in the year 1928 the defences of Aden and the surrounding territory were placed under the command of an officer of the Royal Air Force, Group Captain W. G. S. Mitchell, C.B.E., D.S.O., M.C., A.F.C. This was the second instance—following on 'Iraq—in which the Air Force took complete command of a foreign country. This new Command waged war against that interesting person called the Zaidi Imam Wawa of Sana. Sana is an area which lies to the North-East of Mocha whence comes the best coffee. Sana lies high up in the hills and Air Force pilots were somewhat annoyed at having to climb to a height of 8,000 ft. so that they might drop bombs on villages only about 800 ft. below. The Imam (or High Priest) of the Zaidi sect, whose name is (or was) Wawa, instigated his tribes to raid the coffee growers of Mocha and also our own tribes in the Aden Protectorate. And at intervals we have had to bomb the Imam's tribes to remind them to leave neighbours alone.

The 1928 Service flight to the Cape and back was made in March and April in four Fairey IIIF biplanes under Air Vice-Marshal Tom Webb-Bowen, C.B.E., M.C.

A remarkable air journey was that made by the Under-Secretary of State for Air, Sir Philip Sassoon, who journeyed

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by air from London to Singapore and back in flying-boats and landplanes of the R.A.F., and personally visited almost every R.A.F. Station in the Middle East and the Indian Command. Thereafter he wrote an excellent book on the subject which is most illuminating.

To encourage the taxpayer to take an interest in our first protective fighting line, the R.A.F. took part in a number of local air displays besides holding, in June 1928, what up to then was their record display at Hendon. The R.A.F. also held minor displays of its own at Andover, Halton, Cairo, and Malta. Also special displays to which the public were not admitted were given at Hendon in honour of the King and Queen of Afghanistan in March and the Sultan of Muscat in October.

Naturally, ever since the Air Force was re-established after the demobilization of 1919, exercises of one sort or another have been held each year. But in 1928 Auxiliary and Special Reserve squadrons took part in the annual Air Exercises for the first time, and distinguished themselves in every phase of their work. Army co-operation and fighter squadrons of the R.A.F. co-operated with the Army in the Southern Command manoeuvres in September, and night-flying squadrons operated with the Territorial, anti-aircraft, and searchlight battalions during their training season.

The last notable performance of the R.A.F. during 1928 was at the end of December when more than fifty women and children at the European Legations in Kabul were flown away to safety by Vickers Victoria troop-carriers of the R.A.F. during the disturbances in Afghanistan which resulted in the deposition of King Amanullah, whom we in this country had so notably honoured earlier in the year.

At the end of the year attention was drawn to the fact that there had been forty-nine fatal accidents which had caused seventy-four deaths during 1928—a greater number than in any previous year since 1920. The long casualty list was

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attributed by the Air Ministry to the greatly increased number of hours flown, which itself was caused by the increased number and efficiency of the squadrons, partly because of the exceptionally fine Summer. Nearly 60 per cent of the accidents were at Home Stations.

CHAPTER TWENTY-TWO

The Short Service System

The 1929 Estimates—Attractions for S.S. Officers—Time-Expired Officers in Civil Life—Slots and Parachutes—Increasing Safety—Subsidies for Imperials—National Flying Services, Ltd.—England-India Non-Stop—The Schneider Contest and the Speed Record Over Southampton Water—Our Last Aero-Show (Olympia 1929)—Lord Trenchard's Peerage, 1930—Lord Wakefield's Peerage—Labour's Second Estimates, a Handsome Increase in 1930—Lord Thomson (Air Minister) on Airships—Technical Inaccuracies—Lord Trenchard Retires (June 1930)—The Vickers-Burney Airship R.100 Goes to Canada and Back—The R.101 Wrecked, Deaths of Lord Thomson, Sir Sefton Brancker, and Forty-five Others—The End of British Airships

THE Memorandum introducing the Air Estimates of 1929 contained an interesting and curious defence of the Short-Service system. It says: "Permanent officers are to be provided only in such numbers that will suffice to fill those posts which essentially need men who are looking to the Royal Air Force for their life's career. This body of permanent officers will form the nucleus of the Royal Air Force in peace and of its expansion in war and will provide the specialists in engineering, wireless telegraphy, armament, etc., on whom the technical work of the Service depends. It is obvious that they must be offered a career sufficiently favourable to attract the best material from the Public Schools and Universities. Steps have therefore been taken to ensure an adequate flow for promotion."

The statement is then made that to give effect to these principles and also to improve the careers of airmen (non-commissioned ranks) a substantial number of specialist and administrative posts had been scheduled to be filled by Warrant officers and, in certain cases, by civilians—thus relieving the

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officer establishment. The statement then continues: "Officers with Short-Service Commissions leave the Royal Air Force at a comparatively early age with experience and qualification which should make them eminently suitable for certain types of posts in commerce and in industry. During their service they are encouraged in every way possible through the agency of the Royal Air Force educational organization to prepare themselves for civil employment."

The Memorandum then states that a special organization was set up to get in touch with leading industrial interests to help time-expired officers to get jobs in civil life, and the statement is made that "Satisfactory results are being obtained."—There has been a great deal of argument about whether the results have been satisfactory, but nobody has yet suggested a better method than the Short-Service scheme of ensuring an adequate reserve of officer pilots.

There was still no worth-while increase in the amount spent on the Air Force up to this date. The total estimate for 1929–30 was only £19,645,100.

On the technical side two notable statements were made. One was that the much-discussed Handley Page slots were being fitted rapidly to Service aircraft, and another was that a parachute was by now provided for every machine in the Service which could take it, except sea-going craft.

Possibly I may be forgiven for recalling the fact that in season and out of season, in print and verbally, I had been arguing in favour of making parachutes standard equipment throughout the Air Force ever since I learned that the Germans were using them in France in 1918. Similarly, I had the privilege of introducing the Handley Page slot in print to the world in 1920 and I have been arguing in favour of it as a means of saving life and property ever since.

By 1929, as mentioned, we had progressed to the point of fitting slots to some aeroplanes and parachutes to all aeroplanes, with the exception of sea-going craft, and I have never been able to see why those who fly over the sea should not

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have parachutes to allow them to come down gently in the water before taking to their inflatable life-belts. Pilots cannot always alight safely on water, and rubber dinghies do not always float or even inflate.

Perhaps a history of the Air Ministry is not the proper place in which to discuss methods of increasing the safety of flying. A history should record and not discuss. But perhaps an historian may be allowed to record those things which have been left undone by those whose doings he is recording.

The expansion of Imperial Airways Ltd. is shown in the Estimates by the allocation of the sum of £349,000 as subsidy to that concern. Of this sum £40,000 was noted as the price of two Short Calcutta boats, the property of the Air Ministry, which had been sold to Imperial Airways to be used on the Mediterranean section of the route to the East.

A sum of £16,000 was provided for as subsidies to twenty-three Light Aeroplane Clubs, and £3,000 was allocated to an ambitious scheme called National Flying Services Ltd., which had been put up by Captain the Rt. Hon. and Hon. Frederick Guest and Colonel the Master of Sempill to increase and popularize the use of light aeroplanes and internal air transport in the British Isles.

A remarkable feat, approved and financed by the Ministry, was performed in April 1929, when Squadron Leader Jones-Williams and Flight-Lieut. Jenkins in a Fairey monoplane (Napier Lion motor) flew non-stop from Cranwell in Lincolnshire to Karachi. They left on April 24 at 10.37 hrs. (British Summer Time), and flying over Belgium, Germany, Austria, Yugoslavia, Turkey, and Arabia, reached Karachi at 11.30 hrs. (B.S.T.) on April 26. The distance was approximately 5,000 miles and this was the first time that an aeroplane had flown non-stop from England to India.

Again in 1929 the Air Ministry allowed the R.A.F. to compete for the Schneider International Trophy. This time it was won by Flying Officer H. R. D. Waghorn in a Supermarine Rolls-Royce S6. Afterwards Flight-Lieut. George

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Stainforth beat the world's Absolute Speed record in a Gloster Napier 6. The contest was flown over the Solent from Calshot.

Squadron Leader A. H. Orlebar two days afterwards, on September 12, 1929, beat Squadron Leader Stainforth's record by doing 357·7 m.p.h. in a Supermarine Rolls-Royce S6.

The year 1929 was also remarkable for the holding at Olympia of the last Aero Show held in this country up to the time of writing. It was generously supported by the Air Ministry, who allowed aircraft constructors to show machines which were on order for the R.A.F., and there were also highly educative Air Ministry technical exhibits showing how research and inspection was done.

The New Year Honours List published on January 1, 1930, announced the promotion to the Peerage of Marshal of the Royal Air Force Sir Hugh Montague Trenchard, Bart., G.C.B., D.S.O., Chief of the Air Staff since 1919. He took the title of Baron Trenchard of Wolfeton, in the County of Dorset.

In the same Honours List Sir Charles Cheers Wakefield was made a Baron.

The Labour Party had come back into power in 1929, so the Air Estimates of 1930-31 were introduced in the House of Commons by Mr. Montague, the Under-Secretary of State for Air, as Lord Thomson was again Air Minister.

In this instance the Estimates must have been prepared while the Labour Party was in power, and therefore they deserve credit for the fact that the Net Estimate was £17,850,000 as against £16,960,000 in the previous year, an increase of £890,000. The increase in Vote 3, technical and warlike equipment, showed an increase of £642,000, which was very satisfactory. The Gross Estimate was £20,923,000.

A good deal of the White Paper which introduced the Air Estimates was devoted to the achievements of airships. Lord Thomson was rightly enthusiastic about the possibilities of lighter-than-air craft. He emphasized the fact that both the R.100 and the R.101 had proved very satisfactory in their

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experimental flying. Undue emphasis seemed to be laid on the fact that the R.101 was equipped with the first heavy-oil compression-ignition motors, commonly known as Diesels, to be used as a power unit in aircraft in this country.—Aeroplanes with Diesel motors had already flown in the States. The White Paper was criticized on the grounds that the Air Ministry made a serious mistake in using experimental heavy-oil motors in this ship. Seeing that the ship itself was an experiment, the critics argued that it ought to have had motors whose performance was known exactly.

The White Paper also used the rather surprising argument that the rival ship, built by Sir Dennistoun Burney's Vickers undertaking, was unfit for use in a tropical climate because it used petrol instead of heavy oil. Considering that during the War 1914-18 a Zeppelin starting from Bulgaria went across the equator to German South-West Africa and back, and that during and since the War airships have continually operated in temperatures at least as high as anything that was likely to be met between England and India, the objection seemed ill-judged.

There was a great deal of discussion among aeronautical people about these ships at the time. The R.101 as a Government ship was commonly known as the Socialist ship, and the R.100 was known as the Capitalist ship.

On the civil side the amount of all payments to flying clubs and National Flying Services Ltd. was estimated at £20,000.

Lord Trenchard retired from the post of Chief of the Air Staff on June 1, 1930, and Lord Thomson paid a handsome tribute to him in the White Paper introducing the Air Estimates. He said: "Since 1912, when he joined the then Royal Flying Corps, Lord Trenchard has devoted himself to the Air Service with a single-mindedness of purpose which deserves and has received the recognition not only of the Force which he has brought to so high a pitch of efficiency, and of the successive Governments which he has so loyally served, but

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of the country as a whole. The Royal Air Force will always remember the inspiration and guidance which it has received from him during the difficulties of its early years."

Thus the Air Ministry and the Royal Air Force lost, unavoidably, the greatest personality who has had to do with Aviation in any country. Not only had Lord Trenchard shown himself to be a great leader, whom his men would obey blindly, with perfect faith in his judgment, but he proved himself to be one of our greatest administrators and organizers. His name is still a legend among a generation of Service Aviators few of whom have seen him. And the men who served with and under him and were made by him are to-day in charge of the Air Power of the British Empire.

His subsequent career as Chief Commissioner of the Metropolitan Police, and his complete reorganization of that Force, showed that he had lost none of his powers. And, as I write, his influence, although he holds no official position, is still among the greatest in the country.

On July 29, 1930, the airship R.100, the Vickers-Burney ship, left Cardington at 03.48 hrs. It reached the St. Hubert aerodrome, Montreal, where a mooring mast had been built to receive it, at 02.25 hrs. on August 1, but it did not go to the mooring mast until 05.36 hrs. as the captain, Squadron Leader Booth, apparently did not care about mooring to a strange mast in the dark. The actual journey of 3,364 miles was made in 79 hours. The fabric covering of one of the fins of the ship was damaged by a severe gust of wind about 200 miles before reaching Montreal.

Although it has nothing directly to do with the Air Ministry, there may be interest in mentioning here that when the R.100 reached Montreal the North Atlantic had been crossed by airship twelve times, which meant about 550 people, and there had been no failures. Of some 24 attempts by heavier-than-air craft, 9 (with 23 people) had gone across from West to East, and 2 (with 6 people) from East to West. Six aero-

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planes (with 18 people) had been picked up at sea, and 7 (with 11 people) had sunk without trace.

The R.100 had been built to the designs of Mr. B. N. Wallis, who has since become still more famous as the designer of the geodetic principle of aeroplane construction as exemplified in the Vickers Wellesley and Wellington of to-day. His personal assistant was Major P. Litherland Teed and the Works Manager at Pulham was Mr. N. S. Norway, later founder of Airspeed Ltd., and now still better known as "Neville Shute" the novelist.

The R.100 returned safely to Cardington on August 16. It left the mooring-tower at St. Hubert at 21.30 hrs. on August 13 and reached Cardington at 10.35 hrs. on August 16. Thus the return voyage, with the normal favouring Westerly wind, took 57 hrs. 5 min.; 3,200 gallons of fuel remained.

The Government-built airship R.101 left its mooring mast at Cardington at 19.58 hrs. on October 4, 1930, in an attempt to fly to Egypt and India. It was forced to the ground at Allone, near Beauvais, France, at 02.50 hrs. on October 5, and was totally destroyed by fire. The airship carried fifty-four passengers and crew of whom forty-seven were killed. These included Lord Thomson, Secretary of State for Air; Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation; Wing-Commander Colmore, Director of Airship Development; Lieut.-Colonel V. C. Richmond, Director of Airship Development and the designer of the ship; Major G. H. Scott, who was Captain of the ship; Major P. Bishop, Chief Inspector A.I.D.; and many other useful people.

The ship was foredoomed to failure. Its structure and its design had been severely criticized by those who knew most about the subject in this and other countries. Its trials had been unsatisfactory. And the Air Ministry had been warned in print that it would come to grief.

Unhappily, for political reasons, the ship was ordered to start for India, and the Air Ministry and R.A.F. had to obey orders.

The wreck of the R.101 ended the Air Ministry's dealings

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in airships. The development of lighter-than-air craft was left to the United States and to Germany, where great progress was made, and a practically fireproof airship was built by the Zeppelin Co. to be lifted by helium gas and driven by Diesel-oil.

The R.100, one of the best airships ever built, was torn to pieces. Its duralumin frames were flattened under a steam roller in its own shed at Cardington, and were sold as scrap metal.

CHAPTER TWENTY-THREE

Labour's Liberality

Lord Amulree as Air Minister, October 1930—Lieut-Colonel Shelmerdine as Director of Civil Aviation—Enquiry into Loss of R.101 by Sir John Simon—The Buenos Aires Exhibition Gamble and Loss—Realism at the Universities—The Report of the R.101 Enquiry—A "Crushing Indictment"—The First Air Mail, Australia to England (April 1931)—Director of Training, Iraq, Loss of—The Last Schneider Trophy Contest (September 12, 1931)—Lady Houston's Generosity—The World's Speed Record—Re-equipping the R.A.F.—The First Routine Air-Mail to the Cape

THE death of Lord Thomson in the R.101 was followed by the appointment of Lord Amulree as Secretary of State for Air. William Warrender Mackenzie, G.B.E., first Baron Amulree of Strathbraan, was a Scottish lawyer of high distinction and during his brief period as Secretary of State, which was ended by the fall of the Labour Government, he won the personal esteem and earned the respect of all who had to do with Aviation.

Sir Sefton Brancker, Director of Civil Aviation, who was killed in the R.101, was succeeded by Lieut-Colonel Francis Shelmerdine, who for several years past had been Director of Civil Aviation in India, whither he had gone after serving under Sir Frederick Sykes at the Air Ministry.

An inquiry was held into the loss of the R.101. Sir John Simon presided, assisted by Lieut.-Colonel J. T. C. Moore Brabazon, M.P., and Professor C. E. Inglis, as assessors.

Colonel Shelmerdine was succeeded as Director of Civil Aviation in India by Captain Frederick Tymms, M.C., who after a distinguished career in the R.F.C. and the R.A.F. during the war had served in the Technical Department of the Department of Civil Aviation from 1919 until 1927 when he

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was made Air Ministry Superintendent of the Cairo-Karachi air line. He has held the Indian appointment ever since January 1931.

An unfortunate gamble was taken by the Air Ministry and the British Aircraft Industry in conjunction early in 1931 when the Trade decided to exhibit co-operatively at the British Trade Exhibition in Buenos Aires. The show was opened by H.R.H. the Prince of Wales, later King Edward VIII and now Duke of Windsor, on March 14. His Majesty's Aircraft-Carrier *Eagle* was already in South American waters, and was sent to Buenos Aires to show the Argentinos and South Americans generally what the Fleet Air Arm could do. Altogether a good deal of money was spent, and practically no orders were got because the world depression, more commonly called the Great Slump, had already started. This was an example of doing the right thing at the wrong time.

In spite of the World Slump the Labour Government was generous to the Air Force in its Estimates for 1931-32. After a cut of £350,000 in the Navy Estimates, £570,000 in the Army Estimates, and after the House had been told that something like 2½ millions were to be saved on Naval expenditure within the next few years, Lord Amulree's Memorandum disclosed that the Air Ministry was to have an increase of £250,000. Evidently Mr. Snowden, who was then Chancellor of the Exchequer, took the high patriotic stand which he had taken on that famous occasion at The Hague in 1930 when his attitude towards foreigners at the International Conference made him for a short while a national hero in England.

The Gross Estimate was £21,197,200.

An interesting minor point in this Memorandum was the statement that the Air Squadrons of the Universities of Oxford and Cambridge had as their object the influencing of the flow of candidates for Commissions in the regular Air Force, and Air Force Reserve, and the Auxiliary Air Force, the stimulation of interest in air matters, and the promotion and maintenance of a liaison with the Universities in technical and

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research problems affecting Aviation. This meant a distinct step towards facing realistically the true reason for the existence of the University squadrons, which hitherto had been camouflaged as merely Governmental parental interest in scientific progress.

The report of the inquiry held into the loss of the R.101 was issued by His Majesty's Stationery Office on March 31. It was a long and informative document which showed definitely that the ship ought never to have started on its voyage and that in fact it ought never to have been built in the way in which it was.

A writer of the period called the report "The most crushing indictment of airships that has yet appeared." As a matter of fact it was merely a crushing indictment of the design, construction, and misuse of this particular ship.

Paragraph 107 of Sir John Simon's report says: "Before bringing this report to a close my colleagues and I desire to add certain general observations.

"It is clear that if those responsible had been entirely free to choose the time and the weather in which the R.101 should start for the first flight ever undertaken by any airship to India, and if the only considerations governing their choice were considerations of meteorology and of preparation for the voyage, the R.101 would not have started when she did. . . .

"She had never gone through trials which proved by their length and condition that she was well able to cope with a continuance of unfavourable circumstances. The programmes of trials drawn up for her by her Captain had never been carried through, and the intended length of her last trial was avowedly cut down in order to provide a little more time for preparation before the date which was contemplated for her to start for India. No adequate speed trials had ever been carried through, and indeed this fact was so clearly realized that an official of the Air Ministry urged that she should conduct such speed trials on her voyage to India.

"It is impossible to avoid the conclusion that the R.101

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would not have started for India on the evening of October 4 if it had not been that reasons of public policy were considered as making it highly desirable for her to do so if she could."

Those paragraphs put in the kindest possible language the plain statement that R.101 was unfit for the voyage and that she only started because of political pressure brought to bear by the Secretary of State for Air—who paid for his decision with his life.

The voyages which have been made since then with German airships across the South and North Atlantic show what could be done by a fireproof airship, such as has already been built in Germany, with heavy-oil Diesel motors, and gas-bags designed to give the necessary lift with non-inflammable helium gas, if and when obtainable.

A fact that is worth recording here, although it is only indirectly concerned with the Air Ministry, is that the first air mail from Australia to England left the Archerfield Aerodrome, Brisbane, Queensland, on April 25, 1931. It was carried as far as Singapore by Queensland and Northern Territories Air Services, Ltd.—commonly known as Qantas—which had been founded by Mr. Hudson Fysh and other Queenslanders in 1920. It was picked up at Singapore by Imperial Airways Ltd.

What may be regarded as the seal of success of the Air Ministry's control of 'Iraq occurred on June 17 when the last of the notable rebels against British Authority, modified by 'Iraqi Government, the Sheikh Mahmoud, surrendered to a detachment of the Air Force. After his surrender at Tenjwin near the 'Iraq-Persian Frontier (Iranian Frontier) he was taken by air to Ur and then was exiled to Trans-Jordan with his family.

For years Sheikh Mahmoud and his Kurdish raiders had provided practice for the Air Force in 'Iraq after the rest of the country was quiet. And there is a legend that when Mahmoud's surrender became known at the Air Ministry in London another Member of the Air Council walked into the

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office of Sir John Salmond, the Chief of the Air Staff, and remarked: "Mornin', Salmond, I've come to sympathize with you in the loss of your Director of Training in 'Iraq.'"

The Air Ministry's last International sporting gamble, namely the backing of the design and construction of an aeroplane to compete for the International Schneider Trophy came off on September 12 when, because of the withdrawal, of the Italian team, Flight-Lieut. John Boothman, R.A.F., flew over the course and claimed the Trophy. His mount was a Vickers-Supermarine Rolls-Royce S.6B.

To make sure of securing the Trophy, Flight-Lieut. Boothman did not force his machine to its highest speed, but he captured the Absolute Speed record for 50 kilometres and 100 kilometres in the course of his journey. His average speed round the whole course was 340.08 m.p.h.

Later in the same day Flight-Lieut. G. H. Stainforth, in another Supermarine Rolls-Royce S.6B, made an attempt on the World's Speed Record, and put up, as an average of four runs over the three-kilometre course, a speed of 378.05 m.p.h., which beat the previous World's Record by about 21 m.p.h.

As the Air Ministry did not care to stand all the financial risk of organizing the contest and paying for the aeroplanes and motors, Lucy, Lady Houston, formerly Lady Byron, put up £100,000 to back the attempt. And after the contest was over, none knew whether the British machines belonged to the Air Ministry or to Lady Houston. . . .

Not satisfied with these results the Air Ministry, having secured itself on the financial side, and apparently finding a balance in hand, allowed Flight-Lieut. Stainforth to go for the Speed Record again on September 29. His average speed over the four runs worked out at 408.8 m.p.h.

This was the first time that any vehicle or human being had travelled at a speed exceeding 400 m.p.h. To-day there are a good many fighting aeroplanes which can exceed 400 m.p.h. and there are some bombers which come very near to it. But

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we must remember that this first 400 m.p.h. was put up on a seaplane mounted on floats which were nearly as big as itself, and there is no doubt that if those machines had been able to discard or retract the floats, and their connecting struts and wires, their speed would not have been far short of the existing record of 450 m.p.h., so much credit is due to the Air Ministry and the British Aircraft Industry for the results achieved.

The year 1931 is rather notable for the improvement in the equipment of the R.A.F. than for actual increase in its numbers. Three new regular Squadrons were formed and an extra Flight was formed for the Fleet Air Arm, but all these were equipped with what were then new types of machines, the Fairey Gordon and the Hawker Hart. The whole Flying-boat Squadron was equipped with Short Rangoons, a much improved type of boat, and a number of existing squadrons were re-equipped with Fairey Gordons, Hawker Harts, and Hawker Fury single-seat fighters.

The year 1932 began significantly with the first consignment of air-mail matter on a regular air service between England and the Union of South Africa, on January 20. Although air mails as such had been carried previously between England and Australia the service was intermittent.

CHAPTER TWENTY-FOUR

Conservative Conservation

Danger-point in Estimates, 1932-33—£1½ Millions Decrease—What are Service Estimates?—The League of Nations Disarmament Conference at Geneva—British Unilateral Disarmament—Sir Philip Sassoon on "An Earnest Effort"—Our Lowest Ebb in the Air—International Control of Air Lines Proposed—Lord Londonderry's Struggle for the Air Force—Mr. Baldwin on "Fear of the Air"—Sir Geoffrey Salmond Attacked by M.Ps.—Sir Philip Sassoon's Defence—Up-Grading the R.A.F. in 1933—The Long-Distance Record

THE new National Government, which had been in office long enough to influence the drawing-up of the Air Estimates, managed to reduce the Air Estimates for 1932-33 to a dangerous extent. The Estimates themselves showed a decline of £700,000 on those for the previous year, and the Appropriations for Aid were down by nearly £800,000. So the Gross Total was £19,702,700, or £1,494,500 less than 1931.

Estimates for the Fighting Services have been described as "the result of a war between the permanent Secretariat at the Ministry plus the Serving Officers at the Ministry on the one hand, and the permanent Civil Servants of the Treasury, plus the political chiefs of the Treasury on the other hand."

"Naturally the Serving Officers try to get all they can for their own personnel and equipment, and the permanent Secretariat do their best to help them, for obviously the bigger the Department the more important are the Civil Servants concerned, apart from the fact that the Civil Servants do become imbued with the spirit of the Fighting Services. On the other hand the first duty of a Treasury official is to cut down expenditure to danger-point. And in this he is aided, abetted, and instigated not only by his own political chief, but by all

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the other politicians who want money to spend on Government ventures which will catch votes such as doles, tax-collecting, education, and so forth."

Unfortunately the Fighting Services are not worth many votes from any point of view. Moreover at this particular time, 1932-33, the League of Nations Disarmament Conference was in full blast at Geneva, and our own Government was possessed by a passion for Unilateral Disarmament.

An aeronautical publication, *The Aeroplane*, which was noted for its apposite quotations, published at that time this verse:

*"God give us peace! Not such as lulls to sleep
But sword on thigh, and brow with purpose knit!
And let our ship of State to harbour sweep
Her ports all up, her battle-lanterns lit,
And her leashed thunders gathering for their leap."*

That came from the American writer, James Russell Lowell. While this book is being written we are reaping the reward of that disarmament policy.

The Air Estimates were introduced by the Right Honourable Sir Philip Sassoon, Under-Secretary of State for Air, who was a firm believer in Air Power. He said that these Estimates "bore the imprint of an earnest effort to effect economy without impairing efficiency." He did not call them a successful effort, so we may assume that the Air Ministry agreed with the rest of the people in Aviation that efficiency was impaired in spite of the effort.

A further misfortune was that during the same period Aviation in Canada was nearly killed by the parsimony of the Government. At no time in the history of the British Empire has Service Aviation been brought so low.

The policy of the pacifists about this period went so far that proposals were broadcast in the Press and in speeches for international control of commercial air lines. The argument was that if one country had a large fleet of air-liners, and all

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countries had been persuaded to abolish their warplanes as such, the country which had the biggest fleet of air-liners could load them up with bombs and bomb any other country. The subject was, I believe, largely discussed at the Disarmament Conference at Geneva.

Questions were asked in the House of Commons on November 2, 1932, whether the Prime Minister could assure the House that His Majesty's Government would not commit themselves to any such proposals as those now being put forward for the total abolition of Military and Naval Aviation, coupled with international control of Civil Aviation. The Prime Minister, Mr. Baldwin, assured the House that His Majesty's Government had no intention of making any departure from the normal practice when Governments are engaged in important negotiations.

The best that the House could get out of the Prime Minister was the assurance that the Government would not commit the country to any further commitment without the consent of the House.

This may be taken as the beginning of the struggle between the Air Minister, Lord Londonderry, and the Prime Minister and certain of his supporters in the Cabinet, which eventually led to the dismissal of Lord Londonderry and the panic expansion of the Royal Air Force.

The Marquess of Londonderry, himself an aviator of skill and experience, and a soldier of many years' service, was fully alive to the danger to this country of cutting down the Air Force while other countries were expanding theirs, and allowing Civil Aviation to fall under the control of an international combine.

Lord Londonderry had the sincere backing of everybody in this country who had to do with Aviation. In spite of his best efforts the strength of our Air Force, though not its efficiency, remained dangerously low while the Russian and German and Italian Air Forces were growing steadily and rapidly.

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In his speech in the House of Commons on November 10 on Disarmament Mr. Baldwin said that the world suffered from a sense of fear, want of confidence, and that it was a fear held instinctively without knowledge very often. But, he added, there was no one thing more responsible for that fear than the fear of the air. Mr. Baldwin said that Captain Guest (the former Air Minister) had in his speech that day expressed the very proper fear lest we, with a comparatively small Air Force among the large Air Forces of the world, should disarm from that point of view, and that the vast difference between our strength and the strength of some other nations would remain relatively as great as it is to-day. And he said: "That kind of disarmament does not recommend itself to the Government."

That is an historic sentence. For the unfortunate fact remained that for a time the difference between our strength and the strength of some other nations became relatively worse than it was at that time.

In a speech at a private R.A.F. dinner on November 26, 1932, Air Marshal Sir Geoffrey Salmond, Commanding-in-Chief the Air Defences of Great Britain, had advocated the maintenance of a strong Air Force. As a result Mr. Geoffrey Mander, Liberal M.P. for East Wolverhampton, and Mr. David Grenfell, Labour Member for the Gower Division of Glamorganshire, asked two practically identical questions which were in effect whether the attention of the Government had been called to Sir Geoffrey Salmond's advocacy that military Air Forces should not be abolished, and whether he proposed to restrain such speeches by Serving Officers, seeing that this view was contrary to the declared policy of the Government, and whether he would prevent officers from expressing their opinions on questions which fell within the sphere of Government policy.

Sir Philip Sassoon answering these questions said that he did not think that it was necessary to correct in detail the somewhat misleading account of the circumstances and their

implications contained in these questions, but he might say briefly that the officer named, in the course of a speech at a private Service dinner, where he had no reason to think that his remarks would be reported, made certain observations which were not intended for publication. He, Sir Philip, thought that it was a matter for regret that these expressions of opinion should be detached from their context and given a publicity which was very far from their author's intention.

Mr. Mander asked again whether the Under-Secretary thought that even at a private gathering an attack on the policy of His Majesty's Government should be made by a distinguished Serving Officer.

Sir Philip duly disposed of these and other supplementary questions. But the fact that they should have been asked in that way indicates the kind of things which those who wanted to build up an adequate Air Force had to fight. The fact is that Sir Geoffrey Salmond had not made any statement in his speech which was contrary to the Government's declared policy. He had merely suggested that Air Forces were the greatest deterrent against war and had said that anyhow war was legalized killing.

After all this disarmament talk and pacifism at the end of 1932 there was a certain satisfaction in the fact that at the beginning of 1933 the Air Force as a whole was up-graded—to use a singularly ugly official expression. Sir John Salmond, Chief of the Air Staff, was promoted to Marshal of the Royal Air Force, which gave him rank equivalent to that of Field-Marshal in the Army. Hitherto the only air officer to hold that rank was Lord Trenchard. Sir John Salmond was on the point of retirement but his brother, Air Marshal Sir Geoffrey Salmond, and Air Marshal Sir Edward Ellington were both promoted at the same time to be Air Chief Marshal, a rank which corresponds to a full Admiral in the Navy or a full General in the Army, and thus the whole High Command of the Air Force was raised a step or a peg.

At the time of the Armistice when the Air Force consisted

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of 30,000 officers and 300,000 men, its highest Commanding Officers were three Majors-General—Sir Hugh Trenchard, John Salmond, and Geoffrey Salmond. That is to say, it was considered to be the equivalent of three Divisions in the Army. But by these promotions in 1933 the Air Force became possessed of the equivalent of two Field-M Marshals and two full Generals so that our much diminished Air Force was raised to the status of two Field Armies.

On the whole British Aviation was on the up-grade early in 1933. Lord Wakefield at a dinner late in 1932⁶ remarked that the World Slump, and the consequent lowering of the value of the pound compared with the dollar, would reach its lowest at the beginning of 1933 and that thereafter things would improve. The truth of that brilliant business man's prophecy appeared year by year thereafter. And the Air Force progressed upwards slowly at the same time.

But in the meantime the Air Ministry had helped the Aircraft Industry to raise its reputation. The winning of the Schneider Trophy at great expense to Lady Houston, and some expense to the Air Ministry, and the putting up of the World's Speed Record did much for the prestige of British aircraft. Thereafter the Air Ministry financed the building of a Vickers Vespa with a Bristol Pegasus motor which, piloted by Mr. Cyril Uwins, beat the World's Height Record. It also financed the building by the Fairey Aviation Co. of a monoplane with a Napier Lion motor which beat the World's Long-Distance Record. Piloted by Squadron Leader O. R. Gayford, D.F.C., and Flight-Lieut. G. E. Nicholls, A.F.C., the machine flew from Cranwell, Lincs., at 16.40 hours on February 8 and landed at Walvis Bay, 781 miles north of Cape Town after flying a distance of 5,341 miles in 57 hours 25 minutes.

This general upward tendency certainly raised the whole status of the Air Ministry and the Air Force. But they were still up against the threat of disarmament.

CHAPTER TWENTY-FIVE

The Dangers of Disarmament

Lord Londonderry at Geneva, February 1933—His Seven Pointed Questions—German and French Views—The Vice-Chancellor of Cambridge (Mr. Spens) on British Realism and Air Power—Mr. Anthony Eden on Civil Aviation and Air Attacks—Civil Aviation's Warning to Mr. Baldwin—Captain Harold Balfour's Questions in the House

ON February 20, 1933, the Marquess of Londonderry delivered the opening speech to the Air Commission at Geneva, which had been formed to consider the possibility of abolishing air armament and of controlling Civil Aviation. Lord Londonderry said that in the view of the British Delegation any such scheme must satisfy at least the following conditions:

"In the first place it must be so framed as effectively to prevent all possibility of the resources of Civil Aviation being used for military purposes in the event of an outbreak of hostilities.

"In the second place it must not prevent or hamper the fullest development of Aviation in every country for civil and commercial purposes, nor must it restrict freedom in the realm of experiment and research."

He pointed out that in the resolution in July the exclusion of some such regions had been contemplated.

Lord Londonderry indicated some of the more important problems involved:

"(i) What are the conditions to be satisfied to prevent the misuse of civil aircraft for warlike purposes?—remembering that, as I have already pointed out, if Military and Naval Air Forces are abolished, not only large air-liners, but also any civil aircraft, virtually without modification, could be used for the purpose of attacking large centres of population.

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“(ii) What measures can be taken to prevent the seizure of civil aircraft within its borders by a State which in defiance of the Covenant of the League, Kellogg Pact, and other pacts, has determined on an active aggression or a resort to war?”

“(iii) Does international control to be effective necessitate international ownership?”

“(iv) If so how is the principle of international ownership to be applied?”

“(v) If, as is presumably the case, it is to apply only to international companies, how is the effective control to be established of an internal air line and over the daily increasing number of aircraft privately owned, whether for commercial or sporting purposes?”

“(vi) Would an acceptable system of international control involve some regulation of the question of subsidies?”

“(vii) Is it possible or desirable to impose any numerical limitation on civil aircraft of any individual State?”

As a writer of the period remarked, such regulations would produce situations equivalent to developing accurate rifles for big-game shooting and making their use in war impossible. He recalled that the longest and bloodiest war of the nineteenth century was the American Civil War, in which each side started without any armament or organization at all.

After Lord Londonderry's statement there was considerable discussion, in the course of which Herr Brandenburg the German delegate, who, incidentally, as Major Brandenburg had commanded the biggest air raid on London early in 1918, said that he would not object to supervision of civil air fleets provided that Military Aviation were abolished and that Civil Aviation did not suffer from control. But to consider a scheme of internationalization which was not thought necessary for other arms would be to enter a labyrinth from which there could be no successful issue.

Monsieur Pierre Cot, the French Communist Air Minister, appealed for the internationalism of civil aircraft and the establishment of an International Air Police Force. He was

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convinced that civil aircraft might be rapidly transformed into military weapons, and that if Military Aviation were merely suppressed, without internationalization of civil aircraft, there would be unequal conditions of security.

He was supported by the delegates of Belgium, Czechoslovakia, Yugoslavia, Sweden, and Norway.

The Italian delegate said that the Committee must take as its goal, not the total suppression of Military Aviation, which was an impracticable aim, but a serious limitation. Italy proposed the abolition of military machines equipped for bombing.

I quote this discussion at some length because ultimately it had considerable influence on history. We are all still in doubt whether those who argued for internationalism of Air Force and Air Transport were (a) merely being utopian, or (b) whether they were pursuing a policy which seemed, by a process of *reductio ad absurdum*, to reach a point at which all nations could say that they would now proceed to develop their Air Forces according to the schemes of 1924 or thereabouts, or (c) whether it was part of a scheme to get international aviation under the control of the Commintern.

Another speech which had equally direct bearing on the future development of British Aviation and the Air Ministry was that of the Vice-Chancellor of Cambridge University, Mr. Spens, Master of Corpus Christi College, at the Cambridge University Air Squadron dinner on March 6, 1933. He said that he did not profess to be competent to speak on how air war must be limited. He recognized that all of us wished to limit war. He stated emphatically that British opinion was sufficiently allied to fact to stand little interference with the operations of the Air Force against the half-civilized people on our Frontiers. He could express no opinion on how far war between civilized people could be prevented, but the British people were by nature realistic, and the Air Council could rely in the future, as the Admiralty had relied in the past, when threatened by dangerous reduction of our Sea Power, on the

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support of the country when other interests sought to reduce our Power below the danger-point.

Air Vice-Marshal F. W. Bowhill, Air Officer Commanding Fighting Area R.A.F. (later Sir Frederick Bowhill, Air Member for Personnel and later, as Air Chief Marshal, A.O.C. Coastal Command), replying, said that as a Serving Officer it was outside his province to comment on the speech of the Vice-Chancellor, but the Vice-Chancellor, as the Commander-in-Chief of the University, had told them what their part was.

According to a *Times* report of March 8 Captain Anthony Eden, then Under-Secretary for Foreign Affairs, had stated at Geneva that the "necessity of securing to the people of the world immunity from air attacks was more important than ensuring the full commercial development of Civil Aviation." That, as may be seen, was directly in opposition to the dictum of Lord Londonderry, who, as one of His Majesty's Principal Secretaries of State, would thus seem to have been at that time in opposition to our Foreign Office policy.

The Air Estimates for 1933-34 showed a reduction of £64,100 on the gross estimate, which on a sum of £19,638,600 was inconsiderable. But it did not show any encouraging tendency on the part of the Government to build up a bigger Air Force. On the other hand the Fleet Air Arm contribution was increased by £64,000, which on a total of £1,089,000 did show an intelligent appreciation of the importance of Air Power in the Admiralty.

The Prime Minister, Mr. MacDonald, and his Foreign Secretary, Sir John Simon, left London for Geneva on March 9 to take part in further conversations at the Disarmament Conference. Just before he left, a letter was delivered to him which had been signed by forty-nine different organizations concerned with British Aviation, warning him that all these organizations viewed with anxiety the efforts which "under the guise of attaining disarmament in the air are being made to place strictures on Civil Aviation, strictures that can only hamper its legitimate development and—in particular—react

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unfavourably on the enviable position secured by this country in the sphere of air transport and private flying."

The letter claimed that British aeroplanes and British pilots had done as much as those of any other nation to demonstrate the benefits of Aviation to the world at large and the British Empire in particular. The letter requested that the Prime Minister would assure that in no circumstances would the British delegates to the Disarmament Conference be empowered to reach agreements which did not comply with the conditions laid down by the Marquess of Londonderry in his speech at Geneva on February 20.

The signatories to the letter represented the Royal Aeronautical Society, the Royal Aero Club, the Society of British Aircraft Constructors, the Air League of the British Empire, the Guild of Air Pilots and Navigators of the British Empire, and a number of aero clubs and flying schools all over the British Isles.

Following on all this a series of important questions about the Disarmament Conference at Geneva were asked in the House of Commons on March 27. The questions were carefully planned to extract from the Prime Minister and the Foreign Office as clear a statement as possible on the proposed abolition of bombing.

Captain Harold Balfour—who was Under-Secretary of State for Air when war was declared on September 3, 1939—asked the Prime Minister, Mr. MacDonald, whether His Majesty's Government would consider adding to the draft of the Disarmament Convention measures to prohibit the construction during the currency of that Convention of new ocean liners, in order to prevent the misuse of these vessels for purposes of commerce raids as in the late war, or, alternatively, measures for restricting their tonnage in peace? That question is noteworthy because of its ironical reference to the proposal to abolish or limit the size of air liners.

Further, Captain Balfour asked the Prime Minister whether, in view of the fact that the latest proposals in the draft Dis-

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armament Convention relative to bombardment from the air had for their object the protection of non-combatants, and of the impossibility of securing that the prohibition of all air bombardment should be respected in war, he would consider the advisability of substituting measures designed to preserve the civil population from air attack.

The Prime Minister replied that the question assumed that no International Agreement would be carried out. History has since provided its own answer.

CHAPTER TWENTY-SIX

The End of Disarmament

Sir Edward Ellington as C.A.S. (May 1933)—British Air Power Comes of Age—Air Commodore Chamier Takes Over the Air League—Regulation of Private Flying Relaxed—The Turning-Point in Disarmament—Lord Londonderry on Our Responsibilities for Peace (November 1933)—Admiral Sueter's Plea for Re-armament—Mr. Baldwin's Fear of Scaring the Continent—Lord Londonderry Goes East (January 1934)—Mr. Clarry, M.P., and Others, on Disparity in Armament—Mr. Baldwin's Faith in the League of Nations (February 1934)—Slight Increase in Air Estimates—The Fleet Air Arm Passes the Million Pound Mark—New Aeroplanes and Motors for the R.A.F. Equal Cost of Half a Battleship—Mr. Baldwin (March 1934) Promises Conditionally to Strengthen the R.A.F.—What is "Within Striking Distance"?—Mr. Chamberlain on "What We Put Off Yesterday"—Sir John Gilmour on Safeguarding our People—Mr. Ormsby Gore on Present Inferiority

ON March 31, 1933, Marshal of the R.A.F. Sir John Salmond vacated the office of Chief of the Air Staff and his brother Air Chief Marshal Sir Geoffrey Salmond was appointed to succeed him. Sir Geoffrey was very ill at the time so Sir John carried on with the work and did not take up his appointment as Government Director on the Board of Imperial Airways Ltd. Unhappily Sir Geoffrey Salmond, one of the best-loved officers who has served in the R.A.F., died on April 27. Air Chief Marshal Sir Edward Ellington, K.C.B., C.M.G., C.B.E., A.D.C., was appointed Chief of the Air Staff from May 22, 1933.

British Air Power celebrated its Coming of Age in May 1933. On May 12, 1912, a number of officers and men in the Royal Navy and Royal Marines who had learned to fly at Eastchurch in the Isle of Sheppey, and the Air Battalion of

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the Royal Engineers, which had its Headquarters and airships at Farnborough near Aldershot, and had a few pilots and aeroplanes called officially No. 2 (Aeroplane) Company R.E. at Larkhill on Salisbury Plain, became officially respectively the Naval Wing and the Military Wing of the Royal Flying Corps—I note this here because, although the event itself is recorded in the first part of this book, the reader may like to be reminded that our Air Power had in 1933 existed for twenty-one years.

An appointment which influenced the course of our Air History, and the actions of the Air Ministry, was made when in May 1933 Air Commodore J. A. Chamier, C.B.E., C.M.G., D.S.O., was appointed to be Secretary-General of the Air League of the British Empire, a body which had existed for many years without achieving anything. After a distinguished career in the Regular Army and in the R.F.C. and R.A.F. before and during the War 1914-18, he served, after the War, in the R.A.F. in India and as Director of Technical Development at the Air Ministry, when Air Marshal Sir John Higgins was A.M.S.R. His work there was so remarkable that he was induced to join the aircraft department of Vickers Ltd. After some years with that firm he resigned, and later joined the Air League.

Under Air Commodore Chamier's management, for in effect the Secretary-General is General Manager, the Air League—which had been founded before the War 1914-18 to do for the Air Force what the Navy League had done for the Navy in the days of "We want Eight and we won't wait", when we were short of cruisers—sprang to life from a moribund state. The Air Ministry agreed a few years later to give its official backing and the help of the Royal Air Force to the celebration of Empire Air Day which Air Commodore Chamier had initiated, or even invented.

Later again came the Civil Air Guard movement, generated by Air Commodore Chamier, and the Air Ministry, as will be told in due course, backed that also, with the result that air

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enthusiasts all over the country were allowed to learn to fly at absurdly low rates. Also the Air League started the Air Cadet movement, which brought boys from early school age up to eighteen also into the movement.

At the beginning of July the Marquess of Londonderry appointed an independent Committee to consider the regulations governing private flying, the control exercised by the Air Ministry, and the practicability and desirability of its relaxation. The Right Honourable Lord Gorell, G.B.E., M.C., was Chairman, and the other members were Captain Harold Balfour, M.C., M.P., E. C. Gordon England, W. Lindsay Everard, M.P., Lieut.-Colonel J. T. C. Moore Brabazon, M.C., M.P., and F. Handley Page, C.B.E. (representing the Society of British Aircraft Constructors). This Committee's recommendations did much to relax Government control on Civil Aviation and helped towards a great expansion and freedom of Civil Flying—directly in opposition to the recommendations of those who at Geneva had proposed and petitioned for the complete abolition of flying or its complete control by an International Authority.

The turning-point of British Air Power may fairly be set down as November 29, 1933, when a debate took place in the House of Lords and in the House of Commons which in substance seemed to be concerned rather with Re-armament than Disarmament. In the House of Lords the Duke of Sutherland asked for a statement of the aerial position from the Secretary of State for Air. He was followed by Lord Lloyd, whose services to the Colonies and the Dominions have made him known as a staunch Imperialist.

Lord Londonderry replying said: "Our present relative weakness in the air cannot be allowed to continue. . . . When this country is disarmed we can no longer speak with authority to the armed nations, and the greatest threat to the peace of the world would come when we, as a nation, refuse to undertake our responsibilities and our financial obligations for the organization which that peace requires."

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In the House of Commons Rear-Admiral Sir Murray Sueter, M.P., the father of the Royal Naval Air Service, pleaded with the Government to re-arm up to the standard laid down by Mr. Baldwin himself as our minimum safety limit in 1923.

He was backed by Captain Harold Balfour and Lieut.-Colonel Moore-Brabazon.

Mr. Baldwin, replying, said that he was afraid that the motion as proposed by Admiral Sueter and seconded by Captain Balfour would scare people on the Continent.

From that date onwards people began to be really concerned with the rebuilding of the Air Force.

During January and February 1934 Lord Londonderry made a tour of 16,000 miles to inspect the Royal Air Force Stations in Egypt, Palestine, Trans-Jordan, Iraq, and India. On his return he said to interviewers that every Secretary of State for Air ought to inspect the Overseas Commands. He went out by Imperial Airways and did a lot of local flying in Air Force machines. He advocated immediate attention to extending our air routes. He declined to be drawn into any discussion of political import and said that whatever size the Air Force was everybody would not be satisfied.

There was another Air Defence Debate in the House of Commons on February 7, 1934, when Mr. R. G. Clarry, Conservative Member for Newport, moved that "while the House appreciates the sincere efforts of His Majesty's Government to secure ~~world~~ world-wide disarmament, the growing disparity in armament of the United Kingdom in relation to other Powers has brought about a situation which seriously imperils the security and independence of the British Commonwealth and endangers peace; in consequence the House though anxious to co-operate in the universal policy of peace and disarmament either by the League of Nations or by direct International Agreement, urges His Majesty's Government to pursue a course which will adequately safeguard our industrial, political, and national existence."

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He was supported by Mr. Noel Whiteside (South Leeds), Mr. Loder (Lewes), Captain Cunningham-Reid (St. Marylebone), Colonel Cruddas (Wansbeck), Sir Edward Grigg (Altrincham), and various others, including Mr. Winston Churchill.

Mr. Baldwin, replying as Lord President of the Council, said that he would not agree that we were bound to have war. The commonest causes of war were dynastic, religious, and the question of boundaries. The first two were unlikely, and the third was the work for which the League of Nations was intended. If the League failed, the Government would look after the interests of this country first and quickly.

Thus another step was taken in pressing the Government to re-arm.

The tide was turning, but very slowly. The Air Estimates for 1934-35 showed a net increase of £135,000. Lord Londonderry and Sir Philip Sassoon and the Air Council had done their best. The Gross Estimate was £20,165,600.

An encouraging point was that the Appropriation in Aid for the Fleet Air Arm went up from £870,000 to £1,100,000. This was the first time that the Navy had reached up over the million-pound mark for its air ancillary.

A depressing point was that the amount allocated for new aeroplanes for the R.A.F. was only £2,810,000 and the sum for new motors £1,940,000, which together at current rates would have paid for about half a battleship.

In the resultant Debate Mr. Baldwin gave an assurance to the House that, if the Disarmament Conference failed to bring about general disarmament, steps would at once be taken to bring about an Air Disarmament Convention, and he pledged the Government's word that if that failed the Government would then proceed to bring the strength of our Air Force up to the strength of the largest Air Force within striking distance of this country. That is an historical statement which in itself has been the subject of much debate.

Unfortunately Mr. Baldwin told the House nothing about

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how long it was to wait for the failure of the general Disarmament Conference. Nor did he make any statement about how long Air Disarmament Conferences were to go on before the Air Ministry would be allowed to start to bring the Air Force up to strength.

The phrase "within striking distance of these shores" was itself indeterminate, in that France then had the biggest Air Force at close quarters, whereas Russia, which at that time had the biggest Air Force in the world, although not actually within striking distance of this country, was within easy reach of our oil fields in Persia (Iran) and in 'Iraq, and of our strategic airway to India, besides being within reach of Indian territory.

Referring to that Debate at a Conservative banquet in Birmingham on March 9, Mr. Neville Chamberlain said: "These increases in our Estimates have nothing to do with the success or failure of the Disarmament Conference. They merely mean that we are doing to-day what we put off doing yesterday, and which we certainly cannot afford to postpone until to-morrow."

Sir John Gilmour, speaking at Cardiff on May 9 said: "It is one of the tragedies of the times that people live in fear because of the power of flight with its elements of horror and danger. If in the long run we find that our neighbours on the Continent will not meet us in this matter, then very regretfully we shall have to take steps to safeguard our people."

Mr. W. G. A. Ormsby-Gore, speaking at Stafford on the same day said: "If Britain cannot get a great limitation of the air armament of the world, then for every pilot and for every plane that any of her neighbours in Europe trains or builds she will match that pilot and that plane. The position of inferiority she is in at present can no longer be allowed."

There you see the tide beginning to rise which swept our Air Force to its present important position.

In the Debate on the Naval Estimates on March 12, 1934, Sir Bolton Eyres-Monsell, First Lord of the Admiralty, re-

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ferring to the Debate on the Air Estimates, which was closed by Sir Philip Sassoon in an admirable speech, said: "I am sure the House as a whole realizes that the Royal Air Force is now, alongside the Royal Navy, the first line of defence of these islands and of the Empire."

He deplored the growing tendency to indulge in controversy on the respective merits of the Royal Navy and the Royal Air Force for the protection of the Empire.

CHAPTER TWENTY-SEVEN

Thinking Imperially

The First Empire Air Day, May 1934—The Opposition Opposes Re-armament—Mr. Baldwin's Admission of Ten Squadrons Short, June 1934—Sir Philip Sassoon on the Lessons of the MacRobertson Race to Australia—Mr. Churchill and Mr. Baldwin on German "Secrecy" (November 1934)—British and French Mutual Support in Air War (February 1935)—Three Millions Increase for the Air Force (Air Estimates, 1935-36)—The Beginning of Expansion—Civil Air Transport, an Insufficient Bait

THE first Empire Air Day Celebration took place on May 24, 1934. His Majesty King George V, Chief of the Royal Air Force, accompanied by Her Majesty the Queen and Lord Londonderry, Secretary of State for Air, visited the R.A.F. Station at Bircham Newton. Considerably more than 100,000 people visited the various R.A.F. and civil aerodromes which were thrown open to the inspection of the British taxpayer and his young. A feature of the day was the number of small boys who insisted on taking their parents to see the Air Force in its homes and instructed their elders in air affairs generally.

The success of this first celebration had a considerable influence on the policy and growth of the Air Ministry. It showed the Government that the British people were truly interested in air affairs and that they could, without fear of opposition from the people themselves, go ahead with the building of an adequate Air Force.

Another important date in the history of the Air Force and the Air Ministry was June 30, 1934, when Mr. Neville Chamberlain, then Chancellor of the Exchequer, who as a rule did not trouble himself much about air affairs, speaking at

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Gloucester, announced that the National Government would see that this country had an adequate Air Force, "now that money is easier." That would give the impression that the reason why the Air Force had been starved was the World Slump of the preceding years.

The fact that the Government was awakening to the importance of Air Power was shown by the fact that July 30 was given to a Debate on Air Armament. Mr. Charles Edwards (Bedwellty) moved that the House regretted that despite negotiations for a Disarmament Convention and for European pacts of non-aggression and mutual assistance, His Majesty's Government should enter upon a policy of rearmament neither necessitated by any new commitments nor calculated to add to the security of the nation, but certain to jeopardize the prospects of International Disarmament and to encourage a revival of a dangerous and wasteful competition in preparation for war.

Mr. Baldwin, Lord President of the Council, asked to be allowed to speak first in the hope that the Opposition might reconsider their motion. He said that the problem of Imperial Defence and of Disarmament had been made more difficult because within the last year or two nearly all nations had moved towards increasing their armaments. Eleven years ago an increase in the R.A.F. had been announced and the Prime Minister of that day expressly stated that this was a step towards rectifying a weakness which had become intolerable. Every Government had since then proceeded with the utmost slowness hoping that our example might be followed by the world. When the Disarmament Conference opened in 1932 our 1923 programme was still ten squadrons short, and for the first two years of the Conference the programme remained stationary.

The Debate was long and heated, but that statement by Mr. Baldwin is historic as showing the problem which now confronted the Air Ministry. The situation reminds one of that last phase in the career of the great Lord Curzon (*vide* Mr.

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Harold Nicolson) when in spite of his immense ability as a diplomat he failed to get through certain vital settlements with foreign nations because the whole world knew that we had not the Fighting Forces with which to back the words of our Foreign Minister.

In his speech Mr. Baldwin made the astonishing admission: "It is even possible that had our own scale of armaments been higher we should have been better able to influence the course of the Disarmament Conference." And referring to the Royal Air Force, Mr. Baldwin described it as: "This great Service—the one perhaps that interests the people of this country the most as being the one of which they hear and read the most discussion as to its potentialities in time of danger."

One of the neatest comments on the creed of the Internationalist appeared in a political cartoon. Most people know the R.A.F. recruiting poster which bears the words "Join the Royal Air Force and see the World." This picture showed what the artist intended to represent—a typical pacifist pasting on a wall a poster which bore the words "Join the International Air Force and Bomb the World."

On October 11 Marshal of the Royal Air Force His Royal Highness the Prince of Wales (later Edward VIII) formally opened the new Royal Air Force College at Cranwell. This was a minor step in the history of the Air Ministry and of the R.A.F. But the formation of the Air Force Cadet College was one of the first of Lord Trenchard's acts, as already recorded, on becoming Chief of the Air Staff. It was designed to be for the R.A.F. precisely what Dartmouth is for the Navy, and Sandhurst for the Army, and Woolwich for the Royal Engineers and Royal Artillery. It was established in wartime huts which had been occupied by a vast R.N.A.S. Training Station during the War 1914-18. Now, in 1934, almost sixteen years after the Armistice, the main building of the College was ready to be opened. But the personnel lived in the wartime huts for many years afterwards.

In accord with precedent, Sir Philip Sassoon, Under-

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Secretary of State for Air, made another journey of inspection to the Far East during October 1934. His trip covered more than 19,000 miles over 14 countries and he was 180 hours in the air in different types of aeroplanes, both civil and R.A.F.

On his return he remarked on the fact that he had been at Singapore while the historic race from England to Australia, for the handsome prize given by Sir Macpherson Robertson, was taking place. On that occasion the winners, Messrs. C. W. A. Scott and Tom Campbell Black, flew from Mildenhall to Melbourne in 70 hours and 59 minutes for the 11,300 miles. Sir Philip said: "The lessons of the race were, of course, apparent to me, and to all those at the Air Ministry whose duty it is to watch progress in every sphere of Aviation; but I do not wish it to be thought that any special action on the part of the Air Ministry is attendant on the result of this event. The Department is always on the look-out for and ready to make use of the advances in technique, possibly of far-reaching importance, which may result from such a race, but to think that the Ministry awaits the outcome of a sporting event would be very wide of the mark."

Nevertheless, although an ail-mail service to Australia at the overall speed of the winners (176 m.p.h.) could have been established within six months, we are still far from such high-speed communication, although we are ready to carry bombs to hostile countries at a far greater speed, and if necessary over a similar distance, given suitable take-off and landing-places.

When Sir Philip was asked whether he considered that aircraft should replace warships for the defence of Singapore, he replied that he believed that a combination of the two would be the best arrangement—an interesting point is that by 1939 a network of air defence of the Pacific had been established with headquarters at Fiji, linked up with Singapore, and covering the approach to Australia.

For some time Germany's growing Air Power had been

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the subject of discussion in Debates in the House, with the result that in another Debate on Aviation in the House of Commons on November 28, 1934, the House was treated to the curious experience of hearing both Mr. Churchill and Mr. Baldwin beseeching Germany to take away "this veil of secrecy" which the German Government had drawn over its activities in air armament for the past year or so.

The spectacle of the Government of the greatest Empire in the world begging an erstwhile enemy to tell us what it was actually doing in defiance of a Treaty which had been signed fifteen years before was at any rate interesting. But a still more interesting point was that the British Government thus accepted the re-arming of Germany as a partly accomplished fact.

Early in February 1935 an official statement was issued by the Foreign Office on meetings between British and French Ministers in which occurred the following phrase: "It is suggested that the signatories should undertake immediately to give the assistance of their Air Forces to whichever of them might be the victim of unprovoked aerial aggression by one of the contracting parties. The British and French Ministers, on behalf of their respective Governments, found themselves in agreement that a mutual agreement of this kind for Western Europe would go far to operate as a deterrent to aggression and to ensure immunity from sudden attacks from the air; and they resolved to invite Italy, Germany, and Belgium to consider with them whether such a Convention might not be properly negotiated." That was another step in the development of our Air Power.

The Air Estimates for 1935-36 showed an increase of £3,089,000 over the previous year. This did not seem very much at the time, but, as was pointed out, there were not enough trained designers or workmen to produce a larger number of aeroplanes, there were not enough trained pilots to fly them nor mechanics to keep them in order, and there were not enough aerodromes to house them. Consequently

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we had to start at the beginning by equipping and manning aircraft factories, including motor factories, by finding more instructors to train more pilots, and by finding more aerodromes on which sheds for the machines and quarters for the officers and men could be built while the aerodromes themselves were being levelled.

The only consolation we had at that time was that thanks to Lord Trenchard's Short-Service system we had a number of thoroughly well-trained pilots going out of the Air Force each year into the Reserve. In consequence of this a number of Reserve Schools were being set up at which the Reserve pilots should go and do their annual training.

There was a considerable increase in material too. The allocation for aeroplanes and spares showed an increase of £800,000, which brought the total up to £3,577,000, apart from £2,246,000 for motors and spares. And the Admiralty contribution in respect of the Fleet Air Arm was £1,620,000. So we were beginning to show signs of growing. The subsequent Debate on these Estimates produced no particular contribution to history. The Gross Estimate was £23,851,100.

One rather interesting point appeared in the Estimates when Sir Philip Sassoon announced on behalf of the Air Ministry their intention of giving a £25,000 prize for the best possible air transport machine. There was a good deal of argument about it in places where aircraft tradespeople congregate, and the general verdict was that £25,000 was not enough to induce anybody to go to the trouble and expense of building a machine. The argument was that to win the £25,000 a firm would have to spend about £100,000.

The idea that apart from winning any prize the production of a real air-liner which would be better than the American, German, Italian, and French air-liners would itself be a paying proposition did not seem to occur to the Trade. And sad to relate, history has no record of the competition ever taking place.

CHAPTER TWENTY-EIGHT

Panic Expansion

Sir Philip Cunliffe Lister (Lloyd-Graeme), Air Minister, June 1935—Regrets for Lord Londonderry—The Royal Commission on Armament Profits—Dr. Addison's Misunderstandings—Encouragement of Private Ventures—King George V Reviews His Air Force, July 1935—The Central Flying School Returns to Upavon—The first Supplementary Estimate for the R.A.F., July 1935—Vast Expansions—Labour Opposition Against Armament Race—The Maybury Committee on Civil Aviation—A.R.P. First Appears—The Abyssinian War and Its Effects—The "Funk Line"—International Air Amity—Popularity of Aerial Week-ends—International Scientific Congresses—International Air Transport—The Air Minister Becomes Lord Swinton—Another Air Navigation Act—Third Party Insurance—The Air Registration Board

IN the first week of June 1935 the MacDonald-Baldwin Cabinet resigned in favour of what was apparently a Baldwin-MacDonald Cabinet. Various seats in the Cabinet were reshuffled, some were cut and others were given a raw deal—and yet others seem to have been drawn from the discard of the last deal.

The announcement that the Marquess of Londonderry had been appointed to be Lord Privy Seal and Leader of the House of Lords, which meant shunting him onto a side-track, and that Sir Philip Cunliffe-Lister, G.B.E., M.C., formerly Mr. Lloyd-Graeme, and later Lord Swinton, had been made Secretary of State for Air, caused much comment and argument. The new Air Minister had been Joint Secretary to the Ministry of National Service and had been M.P. for the Hendon Division of Middlesex since 1918. He had also been Parliamentary Secretary to the Board of Trade, Secretary to the Department of Overseas Trade, and President of the

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Board of Trade. In January 1934 he was Secretary of State for the Colonies.

From that date began the high-pressure expansion of the R.A.F. which, according to competent authorities, had already made us the most powerful nation in the air before war was declared in September 1939.

Those who know Lord Londonderry and who have been closely in touch with him know that he, partly because of his friendship with prominent Germans and his visits to that country, knew better than most people the strength of the German Air Force. And he did his best to drive into the British Cabinet the need to keep our Air Force at least on a level with that of Germany, and of any other nation which was strong in the air.

Lord Londonderry was much liked in the Air Ministry and had done an immense amount personally to show his own faith in Aviation and to popularize Aviation among the people. He established an airport on his property at Newtown Ards near Belfast, besides having a landing-field in his own park. He and his family flew consistently whenever possible. And his departure from the Air Ministry was deeply regretted by official and unofficial Aviation people alike.

Round about Midsummer of 1935 a Royal Commission was appointed to consider the private manufacture of and trading in arms. This naturally affected the Air Ministry and the British Aircraft Industry. One of the chief witnesses for what might be called the Prosecution of the Aircraft Trade and its accomplice the Air Ministry was Dr. Addison, formerly Minister of Health.

According to a *Times* report he told the Commission on June 19 that there could be no better case of the need for centralized direction than the suggestion that the Government relied during the War 1914-18 almost entirely on the private manufacture of aeroplanes. He said: "There was complete confusion during the latter half of 1916 on account of the great duplication of types, and, while the work was well done,

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supplies had not been forthcoming until a co-ordinated system was applied." He added that the constant development and progress in types was achieved not under the private system, but under the Air Board, which included representatives of private firms, designers, the Departments, the Services, and others.

This statement, which was quite important at the time, was obviously the result of a misunderstanding of historical facts. The confusion which existed during the latter half of 1916, after the inquiry into the administration of the Flying Services, which was started by Mr. Pemberton Billing—as already recorded in the first part of this book—was caused by the fact that before the War and during the whole of 1915 the policy of the War Office, as represented by the Royal Flying Corps, had been to standardize on designs produced by the Royal Aircraft Factory at Farnborough, and to impose those designs on the British Aircraft Industry.

The result as already recorded was stagnation in design, and the resultant inferiority of the R.F.C. to enemy attackers. From this we were only saved by buying French aeroplanes, until the whole position was reversed by handing over to the R.F.C. aeroplanes which had been built to the designs of the British Aircraft Industry for the Admiralty.

The Sopwith two-seat and single-seat fighters and the Handley Page bombers of the Royal Naval Air Service were sent to support the R.F.C. in France, and the Short and Fairey seaplanes and the Navy's flying-boats, based on the American Curtiss designs, attended to coastal patrols. But, in spite of the good work of Admiral Sueter and his Department at the Admiralty, we did not get the best results out of the whole Aircraft Industry until the work of the Industry was co-ordinated under Sir William Weir, later Lord Weir. After that when the Ministry got a good private design it was turned over to all the firms who were making component parts of aeroplanes all over the country and we achieved something like mass production.

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In his evidence Dr. Addison also said that there might be some opposition to the State as a manufacturer on the part of some sections of the Services, as tradition was very strong, particularly in the specialized branches. These specialized branches would formulate the programme and be represented on a Design Committee, but the Supply Department must have all matters relating to production under its control.

The ultimate result of this Royal Commission was that the Air Ministry was allowed to continue on its normal course of encouraging the Aircraft Trade to produce designs, either to Air Ministry specifications or in the form of private venture machines, commonly known as P.V. types. And the result has been that to-day the Royal Air Force has undoubtedly the best designs and the best construction in the world, in all types of aeroplanes.

The good work which the Air Ministry had done during preceding years, in spite of financial hindrances, was displayed for all to see when His Majesty King George V, Chief of the Royal Air Force, reviewed the R.A.F. at Mildenhall Aerodrome, Suffolk, and Duxford, Cambridgeshire, on July 6 for the first time since it became a separate Service in April 1918. The King inspected Units of every type in the R.A.F. on the ground at Mildenhall after which he drove through Newmarket to Duxford and there in a Royal Pavilion watched the fly-past of 350 machines.

The review was under the command of Air Chief Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., A.D.C., Air Officer Commanding in Chief Air Defence of Great Britain, who as Captain Brooke-Popham was one of the first members of the Royal Flying Corps, and as Deputy-Assistant Quartermaster-General had looked after the equipment of the R.F.C. and R.A.F. in France from the outbreak of War in 1914 to the Armistice in 1918.

There is interest in noting that His Majesty was accompanied by the Prince of Wales and the Duke of York, later to become King Edward VIII and King George VI.

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An interesting event which was indirectly a part of the history of the Air Ministry took place in August 1935, when the Central Flying School which had been located at Wittering, Northamptonshire, in 1927, returned to its original home at Upavon in Wiltshire—where Captain Godfrey Paine, R.N., had been Commandant and Lieut.-Colonel H. M. Trenchard, D.S.O., had been his assistant in the beginning of Service Aviation. The Central Flying School had in fact after the War 1914-18 taken upon itself the functions of the Gosport School of Special Flying which was established in 1917 by Major Smith Barry. And since then has been employed solely on the instruction of instructors.

Some excitement was caused among aviators and financiers when, for the first time since the War 1914-18, Supplementary Estimates for the Air Service in connection with the expansion of the Royal Air Force were issued on July 15, 1935. The amount was £5,335,000, of which Technical and Warlike Stores, which meant new aeroplanes and motors, amounted to £3,150,000, and Works, Buildings and Land, which meant new aerodromes, amounted to £947,500.

In an explanatory Memorandum the Secretary of State for Air, Sir Philip Cunliffe-Lister, stated that the scheme provided for seventy-one new squadrons for Home Defence by March 31, 1937. The programme entailed the entry of some 2,500 pilots and 20,000 other personnel during the next two years. It made provision for approximately fifty new Stations, the sites for many of which had already been selected. The aim of the programme was to have 1,500 first-line aeroplanes—but neither then nor thereafter has anybody explained what constitutes a first-line aeroplane.

The Estimates were passed by the House of Commons on July 22. The Air Minister said that the Government had a duty to provide adequate air armament, but they would also strive for a pact with other nations for their limitation. The Labour Opposition moved the reduction of the vote as a protest against what they described as a race

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in armaments, but of course the Government programme was approved.

Civil Air Transport within the British Isles received some attention about this time when the Prime Minister appointed a Committee to consider and report to the Secretary of State for Air upon measures which might be adopted by His Majesty's Government or by local authorities for assisting the promotion of Civil Aviation in the United Kingdom and their probable cost. The Committee was to take into account the requirements of the Post Office for air mail and the relation between Aviation and other forms of transport. The Committee was constituted as follows:

Brig.-General Sir Henry Maybury, G.B.E., K.C.M.G., C.B., C.M.G., M.I.E.E., Chairman; Colonel Sir Donald Banks, K.C.B., D.S.O., M.C., Director-General of the Post Office since May 1934; J. A. N. Barlow, G.C.B., C.B.E., Permanent Secretary to the Treasury; Sir Cyril Hurcomb, K.B.E., C.D., Secretary to the Ministry of Transport; Sir Arthur Robinson, G.C.B., C.B.E., formerly Permanent Secretary to the Air Ministry and at this time Chairman of the Supply Board for the Services; Lieut.-Colonel F. C. Shelmerdine, C.I.E., O.B.E., Director of Civil Aviation; and J. G. Gibson of the Air Ministry, as Secretary.

This Committee sat at intervals for a long time and produced a scheme—which was heartily disapproved by nearly everybody in Civil Aviation—for a network of air lines over the British Isles, the chief feature of which was a suggested junction-point—known for purposes of argument among flying people as Maybury Junction—to which apparently all air lines would fly regardless of what might be their best direct route to and from the two points which they were designed primarily to serve. The recommendation was that Maybury Junction should be situated somewhere near Manchester, which would have meant bringing West Country air lines over the Pennines regardless of weather, and East Coast lines out of the fair weather of the East Coast into the

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murky Midlands. Four years later nothing had come of the scheme.

Round about this time in 1935 we began to hear a great deal about Air Raid Precautions, and the letters A.R.P. began to acquire a meaning which was all their own. This business only affected the Air Ministry indirectly, but I mention the fact as it marks the time from which, in conjunction with the expansion of the R.A.F., this country began to prepare for war.

At about this period the cares of the Air Ministry were increased by the outbreak of war in Abyssinia between the Italians in Eritrea and Somaliland and the armed forces of the Emperor or Negus of Ethiopia, Haile Selassie. Fears that Italy might attack our possessions in the Mediterranean and the territory of our gallant Ally the King of Egypt caused the Navy to remove the bulk of its shipping from Malta and concentrate it in Alexandria Harbour, where, although it could be protected against submarines, it was not so easily protected against air attack. The Naval population was also evacuated from Malta which was left to the Army and the Air Force.

Squadrons of the Air Force were moved with the utmost secrecy from England to the Mediterranean, for the protection of the Fleet at Alexandria and the interception of potential invaders from Italian Libya. There is a legend that after one squadron had moved with the secrecy of conspirators to a point on the Mediterranean Coast of Egypt, and had established itself in camp surrounded by barbed wire, an affable gentleman drove up in an automobile and asked to see the Commanding Officer. When that officer appeared, the visitor presented his card which introduced him as the Italian Vice-Consul in the neighbouring town.

As students of history know, nothing came of the war scare, but it gave many units of the R.A.F. useful exercise in mobilization.

Another interesting step in the policy of the Air Ministry was the establishment of an imaginary line which ran more or

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less from Newcastle to Portsmouth, and came to be known as the "Funk Line." Aircraft constructors were encouraged to open new factories West of this line, and the idea was conveyed to them that the expansion of factories East of that line would not be regarded with favour.

The assumption was that we might reasonably expect the R.A.F. to intercept air raiders from the Continent before they reached that imaginary line. A good many of the more poverty-stricken areas of England lie North and West of this Funk Line and to some extent the population of those areas profited by the pressure on the manufacturers.

A curious development about this time, when the political situation was beginning to cloud over, was that International Air Rallies became particularly popular. Aviators of all countries forgathered most amicably in other countries. Here in England, in France, in Germany, in Italy and in Hungary, and to a lesser extent in Belgium and Holland, "Week-ends Aériens" became popular. Air authorities and members of the Air Forces of the countries concerned acted as hosts or were among the honoured guests. Indeed one of the outstanding facts of the five years or so before the end of 1939 was the friendly attitude of all aviators towards one another, and the genuine friendships which were formed between war pilots of various nations, and between officers of high rank in the Services of the various countries.

Similarly, International Scientific Congresses were organized which brought together the technical and scientific men of all nations. A number of German aircraft designers and scientists read papers to scientific bodies in this country, notably to the Royal Aeronautical Society, and officials of the Air Ministry attended the International Congresses of the Lilienthal Gesellschaft, organized by the German Air Ministry in Berlin and in one year at Munich. The greatest personal goodwill prevailed.

Various International bodies concerned with Air Transport existed and worked together for the common good in devising

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rules and regulations, and standards of airworthiness, to make flying safer and to bring the people of the earth more closely together. Among Air Transport pilots such a thing as national distinctions hardly existed. All were members of the great brotherhood of the air. They shared their knowledge, brought by personal peril and hard work. Their one aim was to make Air Transport the world's great way to peace.

At the beginning of December 1935 Sir Philip Cunliffe-Lister, Secretary of State for Air, was elevated to the peerage. He took the title of Viscount Swinton, from his address Swinton, Masham, Yorkshire. Formerly there had been a Lord Masham, who as Mr. Lister had made a fortune out of silk. And to that family Sir Philip Cunliffe-Lister was related.

Further steps for the development of Civil Aviation were taken when the Air Navigation Bill was introduced into Parliament. It included a scheme for compulsory Third Party Insurance for civil aircraft. Also it set up an Air Registration Board with powers to control the airworthiness of certain classes of civil aeroplanes. It extended the power of the Air Ministry under the Air Transport Subsidy Agreement Act of 1930 and it placed the administration of the Civil Aviation Department of the Air Ministry specifically under the control of the Secretary of State for Air, instead of as previously under the Air Council as such.

CHAPTER TWENTY-NINE

After the Death of King George V

Debate on a Defence Ministry—Lord Strabolgi on the Costs of Battleships versus Bombers (February 1936)—The Cost of Our Abyssinian Precautions—Aircraft Shares and Expansion—Air Estimates, 1936-37—The "Metropolitan" Air Force—Air Estimate Totals, 1928 to 1936—Sir Thomas Inskip as Minister for the Co-ordination of Defence (March 1936)—Mr. Churchill Leads a Naval Attack on the Air Ministry

THE beginning of 1936 was saddened by the death of His Majesty King George V, who, although he never flew, recognized fully the meaning of Air Power, and did much personally to help the progress of Aviation.

On February 11 there was a Debate in the House of Lords and on February 14 in the House of Commons on the advisability of forming a Defence Ministry, which would have under it the three Ministries for the Navy, Army, and the Air Force. In the course of the Debate in the House of Lords, Lord Strabolgi, formerly known as Lieut.-Commander the Hon. J. M. Kenworthy, R.N., pointed out that a Super-Dreadnought battleship cost about £8,000,000 and, a bombing aeroplane about £8,000. Therefore, for the cost of one battleship we could build 1,000 aeroplanes. He asked the House to imagine a squadron of six battleships attacked by 6,000 bombers, or 4,000 bombers and 1,000 other craft to lay smoke-screens. That is a line of argument which has been sadly neglected and might be studied with advantage to-day.

In the House of Commons Rear-Admiral Sir Murray Sueter, who supported the idea of a Ministry of Defence, suggested a Council to advise the Minister, consisting of Service officers who had passed through the Imperial Defence College. He

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also wished to attach to the Council civil members with experience of Industry.

Both Debates were inconclusive, but, in the words of Sir Edward Grigg, the Debate had shown that the country was determined to look after its defences, and this would have a better effect on the peace of Europe than any Debate held in the House for a long time. But Sir Edward could not imagine a Minister taking charge of all three Services and not finding himself overwhelmed with the problems set before him.

The trend of these Debates probably prevented the subject being raised again seriously. Thus the independent existence of the Air Ministry was assured. The situation was well put in some verses, over the signature "Babs," thus:—

*When other States increase their Arms,
No artificial limitation
Can quench, in spite of logic's qualms,
Man's inborn love of imitation.*

*Divert an instinct (and one can)
But grant it's there—let's be sagacious,
And realize it's born in Man
To be both avid and pugnacious.*

That in fact is the basis of all wars and of all that leads up to them.

Another indication of the Air Expansion policy was provided when Supplementary Estimates for the three Fighting Services were issued on February 17, only a few weeks before the new Estimates for the next year were due.

For the Air Services £1,611,000 were asked. In the Explanatory Note reference was made to the decision to accelerate the progress of the Singapore defence scheme, and to the fact that provision had been made for the receipt of £100,000, which was the Air Ministry's share of the gift made by the Sultan of the State of Johore to His Majesty's Government in commemoration of the Silver Jubilee of his late Majesty King George V.

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The statement was also made that the allocation for special measures in connection with the Italo-Abyssinian dispute was £1,007,000. Thus our panic over the Abyssinian business cost us very nearly as much as the whole supplementary Estimate for the Air Services.

The boom in aircraft shares consequent on the Expansion, and particularly on the Supplementary Estimates, produced certain acid remarks in the Debate. Miss Wilkinson said that the Expansion was being made the excuse for a terrific profiteering ramp. The Deputy-Chairman pointed out that the Air Ministry was not responsible for Stock Exchange prices.

Captain Harold Balfour said that distress was caused to the aircraft manufacturers by the rise in the prices of their shares on the Stock Market. He added that all well-meaning and good-intentioned people wanted to see the Expansion carried out with fair and reasonable profit for services rendered but not exorbitant profits.—At that time Captain Balfour was interested financially in several air undertakings and, as usual, knew whereof he spoke.

The Memorandum which was issued with the Air Estimates for 1936–37 stated that the formation of new units in 1936 would be confined to increases in the metropolitan strength of the R.A.F. The use of that word “metropolitan” was peculiar. Most people assumed that it meant the defence of London. Actually it meant the defence of the British Isles, as distinct from the King’s Dominions Overseas.

The Estimates provided for the completion of the programme of 1935, which was to bring the total strength of the R.A.F. at Home up to 123 squadrons, with a first-line strength of 1,500 machines.—And still nobody laid down a definition of a first-line machine.

Another interesting fact was that provision had been made for 50,000 officers and men in 1936.—Which obliges one to recall the fact that the strength of the R.A.F. at the date of the Armistice in 1918 was 30,000 officers and 300,000 men.

At the same time the Navy Estimates showed an increase of

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£1,082,000 in the expenditure on the Fleet Air Arm. The total Air Estimate was £39,000,000.—To save trouble in referring back I may as well give, in round figures, the Net Air Estimates for the previous eight years. They were as follows:

1928	£16,000,000	1933	£16,700,000
1929	£16,900,000	1934	£17,600,000
1930	£17,600,000	1935	£26,000,000
1931	£17,800,000	1936	£39,000,000
1932	£17,000,000		

That shows quite clearly when the air raid alarm sounded.

For historical reasons we must record here the fact that on Friday, March 13, 1936 (ominous day), Mr. Baldwin announced the appointment of the Right Honourable Sir Thomas Inskip, C.B.E., K.C., M.P., as Minister of the Crown for the Co-ordination of Defence. Sir Thomas worked very hard and everybody liked him, but so far as I can trace the Ministry of Defence never made any material difference to the Air Ministry.

Another interesting Government appointment at the time was the appointment of a Committee to co-operate in the re-organization of Industry entailed by the Defence proposals. The Members were Sir Francis Joseph, a member of the Board of Trade Advisory Council and of several Colliery Companies and of the L.M.S. Railway; Lord Herbert Scott, a Director of Rolls-Royce Ltd. and other companies; Sir George Macdonogh, Chairman of the International Paint and Compositions Ltd.; Sir George Beharrell, Managing Director of the Dunlop Rubber Co. Ltd. and a Director of Imperial Airways Ltd.; and Lord Hurst, Chairman of the General Electric Co. Ltd. I have never heard, either from the Air Ministry or from aircraft manufacturers, of any direct result from that Committee.

A renewal of the campaign to remove the control of sea-going aircraft from the Air Ministry and to put it under the Admiralty began on May 4, 1936, when Mr. Winston Churchill attacked the administration of the Fleet Air Arm in a Debate on the supplementary Air Estimates in the House of Commons.

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He argued that aircraft would play their part in all preliminary movements before a naval battle, altering the whole fortunes of battle and they would play their part in trade protection. We ought to establish the effective responsibility of the Admiralty and therefore the efficiency and adequacy of the Air Service. He said that the sea captain commands the naval aeroplane on board ship and the Air Force officer commands it when it has landed on the shore aerodrome, but who commands it in the air?

He admitted that there was an immense amount of goodwill, but he said that two Departments (Admiralty and Air Ministry) were largely antagonistic. He said that he had been told that the Fleet Air Arm had no flying-boats or bombers which bore any comparison with those of leading foreign Powers.—Which was true, because the Fleet Air Arm has no flying-boats at all; they belonged to the General Reconnaissance section of the R.A.F. Also the Fleet Air Arm has torpedo-reconnaissance-spotters, but no big bombers.

He admitted that during the War 1914-18 there was a feeling in the Navy antagonistic to the development of the Air Force, but to-day there was nobody of His Majesty's subjects more air-minded than the Admirals and officers of the Fleet.

This speech is historic in view of later developments.

CHAPTER THIRTY

Radical Changes

The Rearrangement of the R.A.F. Commands at Home—Sir Christopher Bullock Leaves the Air Ministry, August 1936—Sir Donald Banks as Permanent Secretary—Shadow Factories, Air Ministry Announcement, October 1936—The Government's Policy on Re-armament—Statement in the Lords, November 1936—New Trade Alliances—The Balloon Barrage (Barroons—*vide* B.B.C.) Revived—High-Pressure Expansion—Still Behind Schedule—The Air Ministry's Publicity Committee—The Eviction of Civil Aviation to the Strand—Ariel House Opened by H.R.H. the Duke of Kent—King George VI Our First Aviator King Crowned May 12, 1937—Mr. Baldwin Resigns, May 1937—Sir Philip Sassoon Leaves the Air Ministry—The Last R.A.F. Display, June 1937—The End of the S.B.A.C. Meetings—Death of Sir Eric Geddes, of Imperial Airways—The First Imperial Airways Flight to America, July 1937—The Fleet Air Arm Created, July 1937—Ship-Borne Aircraft Go to the Navy—Shore-Based Aircraft to the R.A.F.—“Dual” Training—
The Navy Still Not Satisfied

IN 1936 a complete reorganization of the Home Commands of the Royal Air Force took place. The Air Defence of Great Britain Command which came into operation in January 1925 ceased to exist and the Home Defence Air Force was organized into four Commands. For historical reasons these are worth setting down:

(1) The Bomber Command, Headquarters Uxbridge, Middlesex, to control all the regular Bomber Groups and Auxiliary Groups, under Air Marshal Sir John Steele, K.C.B., K.B.E., C.M.G.

(2) The Fighter Command, Headquarters Stanmore, Middlesex, to control the Fighter Squadrons, the Army Co-operation Squadrons, and the Observer Corps. There were two groups of regular fighter squadrons, an army co-operation

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group, a group of auxiliary fighters and an auxiliary Army co-operation squadron. The Commanding Officer was Air Marshal Sir Hugh Dowding, C.B., C.M.G.

(3) The Coastal Command, Headquarters Lee-on-Solent, Hants, to control the Flying-boat and General Reconnaissance Squadrons formed into two groups. Certain training units were retained under this Command and formed a separate group. The Command was also to be responsible for the administration and shore training of the squadrons of the Fleet Air Arm. The Commanding Officer was Air Marshal Sir Arthur Longmore, K.C.B., C.B.E., D.S.O.

(4) The Training Command, Headquarters Tern Hill, Shropshire, to control all the Training Units at home with exception of the sea-going units. It consisted of three groups, one for flying-training establishments, one for ground-training establishments, and one armament group. The Superintendent of the R.A.F. Reserve and the Inspector of Civil Schools also came under this Command. The Commanding Officer was Air Marshal Sir Charles Burnett, K.C.B., C.B.E., D.S.O.

In August 1936 Colonel Sir Donald Banks, K.C.B., D.S.O., M.C., Director-General of the Post Office, was appointed permanent Secretary to the Air Ministry in succession to Sir Christopher Bullock, K.C.B., C.B.E., who was dismissed from office on July 28 by Mr. Baldwin as the result of an inquiry held by a Committee composed of Sir Evelyn Murray, K.C.B., Sir Richard Hopkins, K.C.B., and Mr. Granville Rand, C.B.

This is not the place in which to discuss or comment upon the rights and wrongs of matters which have become historical. Christopher Bullock served in the Royal Air Force during the War 1914-18 first as an observer and then as a pilot. He entered the Air Ministry as a Senior Clerical Officer in 1920. He became private secretary to Sir Samuel Hoare, and continued as private secretary to a series of Air Ministers until he became Permanent Secretary to the Air Ministry in 1930.

I may record that his dismissal was connected with a personal communication which he made to Sir Eric Geddes,

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Chairman of Imperial Airways Ltd., suggesting that on his retirement from the Air Ministry he, Sir Christopher Bullock, might become a Government Director of Imperial Airways Ltd. A Minute by the Prime Minister dated July 28 said that he, with the Chancellor of the Exchequer and the Secretary of State for Air, having carefully considered the report of the Board of Inquiry, accepted the findings of the Board, but that he was glad to observe that, grave as was the offence from a Civil Service point of view, no question of corruption was involved. I may add that the Air Ministry lost an officer who for twenty years had done great service to the Air Force, and Christopher Bullock lost none of his friends.

About the middle of 1936 people began to talk about a new scheme which the Air Ministry had evolved to increase the output of aeroplanes and aero-motors. This became known as the Shadow Scheme. On October 20, 1936, the Air Ministry issued the following announcement:

"Arrangements have been completed by the Air Ministry for the erection of six Government-owned factories for the production of additional aero-engines for the Royal Air Force, and the erection of the factories is in progress.

"The firms which have undertaken the erection and management of the factories for the Air Ministry are: The Austin Motor Co. Ltd., the Bristol Aeroplane Co. Ltd., the Daimler Co. Ltd., Rootes Securities Ltd., the Rover Co. Ltd., and the Standard Motor Co. Ltd."

Basically the idea was that a number of more or less big factories should be put up in various parts of the country—presumably West of the Newcastle to Portsmouth or Newcastle to Plymouth "Funk Line." Actually some of them are to-day a good deal East of the imaginary line.

The Air Ministry decided to standardize on producing the Bristol Pegasus motor in vast numbers. Various companies made parts of the motor. Some made cylinders, some made valve-gear, and some made crankshafts and crankcases. And the parts made by all these various firms were assembled into

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complete motors by the Bristol Company themselves in the Shadow Factory which they built alongside their own main factory.

Apart from that, the Austin Company put up a very big aircraft factory near their motor works, where they built Fairey Battle two-seat single-motor monoplane light bombers.

Rootes Securities put up on the aerodrome at Speke, near Liverpool, another very big factory where they built Bristol Blenheim twin-motor monoplane bombers. Later on a number of other Shadow Factories came into being. The Rolls-Royce Company put up a great factory at Crewe, because they preferred to do their own shadowing instead of having their name put on other people's products. The Gloster Aircraft Company built a Shadow Factory of their own near their original factory. A. V. Roe & Co. Ltd. took over two factories in Manchester in which to shadow their own products and they themselves built Bristol Blenheims, and so became a Shadow Factory.

At the time of writing one necessarily cannot give a full account of all the Shadow Factories which were put up later on. In fact practically every firm in the Trade, not only makers of aeroplanes and motors, but makers of raw materials, parts and accessories set up Shadow Factories.

In 1938 General der Flieger Erhart Milch, Under-Secretary of State for Air in Germany, accompanied by Major-General Udet, the Chief of the Technical Section of the German Air Ministry, Major-General Werminger, the German Air Attaché in London, and various German Staff officers, were taken round the original Shadow Factories in the Coventry and Birmingham area by the Senior officers of the Royal Air Force, to impress on them in a friendly way what they would be up against if their political chiefs insisted on war.

On the other side a number of officials of the British Air Ministry, and important members of the Aircraft Industry, were similarly conducted round the biggest, brightest, and best of Germany's new aircraft factories, the Heinkel Works at

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Oranienburg, near Berlin, in October 1938. I was with them, so I know.

The basis of the Shadow Scheme was that the firms which undertook to build and manage the Shadow Factories had practically unlimited power to build what they wanted and equip it as they liked. The Government was to pay everything. When in operation the Government was to find the money to run the factories, and the firm was to be paid a management fee for doing the work of running it, but were not to make a profit out of the goods produced.

There are still those who regard this building up of aircraft factories for the Government at the public expense as a certain step towards specializing the whole Aircraft Industry and ultimately the Armament Industry. The chief objection to the Shadow Scheme from the technical point of view was that if one Shadow Factory were put out of action and its flow of parts stopped, all the other Shadow Factories working on that particular type of motor would also be put out of action.

The first official statement of the Government's policy on re-armament was made by Viscount Swinton in the House of Lords on November 17, 1936.

Lord Strabolgi opening the Debate, called upon His Majesty's Government to furnish full information concerning what measure of re-armament had already been achieved and what was the programme for the future. He referred to the increasing armaments in Europe and suggested that His Majesty's Government should consider inducing the United States to collaborate over the stabilization of civilization as they had collaborated over the stabilization of currency.

Lord Swinton, replying, said that he would have thought that, whether the Government's foreign policy was agreed with or not, it was at any rate plainly stated. That this country should play its part in the appeasement of Europe, its influence for peace should be the influence of a strong Britain and a strong Empire. To assume that our foreign policy was the sole justification of our defence programme would be a great mis-

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take. The execution of the programme was necessary to make our policy effective, but apart from that there was our plain and clear duty to see to our own security by sea, land, and air.

Later in his speech Lord Swinton said that in 1932 the Air Force accepted 347 pilots in the regular Service; in 1935 they accepted and put into training 1,300 pilots; this year they set themselves a task of accepting 1,512 and had already reached 1,562.

In that same speech Lord Swinton disclosed much information about the new alliance between aircraft firms and firms outside the aircraft business, such as that between Short Brothers and Harland and Wolff the great shipbuilders in Belfast, and between Blackburns of Brough and Dennys the Clydeside shipbuilders.

He also gave some information about the Balloon Barrage, of which nobody among the general public knew anything at that time. As a matter of fact a good deal of quiet experimenting had been going on with different types of balloons and the whole scheme had been carefully worked out by the Air Ministry. The new scheme, accidentally called the Barroons by a B.B.C. announcer, differs from the scheme devised by General Ashmore, G.O.C. London Air Defence Area, in 1917, in that there is no apron of wires between one balloon and another. The balloons themselves are so arranged that no aircraft flying on a straight course can avoid hitting one or other of them.

The Air Estimates for 1937-38 came up as usual in March 1937. This time Lord Swinton, the Air Minister, announced that in spite of unexpected delays the actual deliveries of Service aircraft during the past eleven months had amounted to two and a half times, and of motors three and a half times, the pre-expansion output. At the end of the month the R.A.F. would consist of 100 squadrons at Home, the equivalent of 20 squadrons with the Fleet Air Arm, and 26 squadrons overseas. And the strength would have risen to 4,850 officers and 51,000 men.—This, be it noticed, was still considerably less than

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the 70,000 officers and men which had been planned a year or two before. The total Estimate was £88,588,600 as against £55,705,600 in the previous year.

A minor item of interest of 1937 was that in April the Air Council created a Publicity Committee. Colonel Sir Donald Banks, the Secretary of the Air Ministry, was its Chairman, and two members of the Press Section of the Air Ministry were appointed to the Committee. But, for some strange reason, nothing has been heard about the Committee in the two succeeding years.

During 1937 the Department of Civil Aviation was completely divorced physically from the Air Ministry. It was taken away from the Kingsway offices and housed in Ariel House, Strand. The new building was officially opened on April 30 by His Royal Highness the Duke of Kent, with whom were Lord Swinton, Secretary of State for Air; Lieut.-Colonel Sir Francis Sheldermine, Director-General of Civil Aviation; Sir Philip Sassoon, Under-Secretary of State for Air; M. Pierre Cot, the French Air Minister; Sir Archdale Parkhill, Australian Minister of Defence; and Members of the Air Council. This was part of the process of up-grading the Department of Civil Aviation consonant with the promotion of Sir Francis Sheldermine to be Director-General of Civil Aviation, instead of Director of Civil Aviation.

King George VI who came to the Throne by the abdication of his brother King Edward VIII on December 10, 1936, was crowned on May 12, 1937. He is the first aviator King of this country. This seems the proper place at which to record the fact that he served as an officer of the Royal Air Force at Cranwell early in 1918. Thereafter he served under Major-General Sir Hugh Trenchard with the Independent Air Force, R.A.F., in the East of France. And on returning to England after the Armistice he qualified as an air pilot and is entitled as such to wear the wings of a Service aviator.

The resignation of Mr. Baldwin as Prime Minister at the end of May 1937 was followed by the appointment of Mr.

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Chamberlain as Prime Minister. And in the consequent reshuffle of Ministerial appointments Sir Philip Sassoon vacated the office of Under-Secretary of State for Air which he had held for nearly thirteen years, except during the short intervals when Labour Governments had been in Power. No ministerial official of his rank had so much experience of Aviation as he had. He was appointed to be First Commissioner of Works. And he was succeeded by Lieut.-Colonel A. J. Muirhead, M.C., who had had no previous experience of Aviation.

The last and greatest of the R.A.F. Displays took place at Hendon on June 26, 1937. His Majesty the King, Chief of the Royal Air Force, accompanied by Her Majesty the Queen and attended by Their Royal Highnesses the Dukes of Gloucester and Kent and other members of the Royal Family were present. About 200,000 people paid for admission. There were 15,000 cars in the enclosures, and many hundreds of thousands of people viewed the Display from hillsides in the neighbourhood and from the streets round about.

The great event of the day was a mass formation flight of 250 aeroplanes belonging to twenty-six squadrons which flew past and saluted the King immediately after his arrival at three o'clock in the afternoon. This was the eighteenth Display, and in all these pageants only one person had been killed.

After this Display the Air Council decided to have no more, officially on the grounds that the training for the Display interfered with the regular training of the Air Force and that the staff-work necessary for its organization interfered with the regular work of the Air Staffs concerned, not only the Air Staff at the Air Ministry but the Staffs of the Bomber, Fighter, Training, and Coastal Commands.

The abandonment of the Display caused much sorrow among the old hands of the R.A.F. who had been in the habit of meeting annually at Hendon. And as there has never been a display to compare with it in any other country, we lost an excellent opportunity of impressing our friends and enemies from other countries alike with the skill and the general high

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quality of the Royal Air Force. Nevertheless, there is no doubt that the work involved in the Display did interfere with the expansion of the R.A.F.

The Air Ministry had for some years given its blessing to Empire Air Day, originated by Air Commodore Chamier, Secretary-General of the Air League, and the displays at various Stations organized on Empire Air Day themselves took on the quality and almost the extent of a Hendon Display. If war had not broken out there is no doubt that Empire Air Day would have become the great display of the Air Force. And as the individual displays were spread about all over the country the total number of taxpayers who were able to see something of what they were getting for their money was much greater than if Hendon had been the only Display.

The ending of the Hendon Display caused also the cancellation of the display of civil and commercial aeroplanes along with a certain number of types of warplanes, which had been held a day or two after the Hendon Display by the Society of British Aircraft Constructors with the blessing and to a certain extent the help of the Air Ministry. The display was designed to interest foreign visitors who had come over to England to see the R.A.F. Display.

Just after the last Hendon Display Mr. F. A. Sidgreaves, Chairman of Rolls-Royce Ltd. and Vice-Chairman of the Society of British Aircraft Constructors, not knowing that it was to be the last display, announced that probably next year (1938) the S.B.A.C. would throw their show open to the public. That would certainly have been good work and would have been a salutary influence in the education of the taxpayer, seeing that there had been no Aero-Show open to the public since 1929.

Sir Eric Campbell Geddes, Chairman of Imperial Airways Ltd. and of the Dunlop Rubber Co. Ltd., died on June 22, 1937. He had been one of Mr. Lloyd George's push-and-go men during the War 1914-18 and had been a member of the War Cabinet, First Lord of the Admiralty, and later Minister

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of Transport. With such a background he was well equipped to deal with the Air Ministry in all the arguments concerned with the increasing subsidies of Imperial Airways year by year as the line was extended to South Africa and to Australia. He was succeeded as Chairman by Sir George Beharrell, Kt., D.S.O.

Shortly after Sir Eric's death namely, on July 5, the first Imperial Airways flying-boat started its journey to America and arrived on July 6. An American flying-boat left Botwood, Newfoundland, nearly three hours later and arrived at Foynes in Southern Ireland on July 6. The time of the British flying-boat against the wind was 15 hours 9 minutes from Foynes to Botwood and the time of the American boat with the wind was 12 hours 34 minutes from Botwood to Foynes.

On July 30, 1937, Mr. Chamberlain, the Prime Minister, made a statement in the House of Commons which notified the greatest change in the composition of the Air Ministry since its formation in April 1918. In reply to a question by Mr. Attlee, the Leader of the Opposition, the Prime Minister announced that the Government had decided that shore-based aircraft, which term includes flying-boats, should remain as at that time under the complete control of the Air Ministry, but that ship-borne aircraft should be placed under the administrative control of the Admiralty.

He made plain that the decision did not reflect upon the present condition of the Fleet Air Arm, where a keen and efficient Service had been built up, but it had been reached because the Government believed that the lines now laid down would be the most satisfactory arranged for the future. He expressed the Government's appreciation of the untiring efforts of the Air Ministry to make a success of the system for which they had been responsible. He ended by hoping that these decisions which the Government had reached after full enquiry would be accepted in every quarter as a final and satisfactory settlement of a prolonged controversy which in the public interest should be closed.

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Captain Harold Balfour asked whether the transfer of the administrative responsibility for sea-borne craft included the setting up of a dual system of training and a "duel" system of supply or whether they still remained the primary responsibility of the Air Ministry.—The spelling of the word "duel" is taken from the official report commonly known as Hansard, and those who were interested in the subject were anxious to know whether this misprint was merely an intelligent anticipation.

In fact there was, up to the declaration of war in September 1939, still a faction in the Navy, but more particularly among the retired Admirals, who argued that flying-boats, because they rested on the water, ought definitely to be the property of the Admiralty.—The answer of the other side was that flying-boats operating from shore bases were long-range guns and that the coastal artillery had, nearly a century earlier, been taken away from the Navy and given to the Royal Garrison Artillery, and that the harbour mines had been given to the Royal Regiment of Engineers.

This decision by the Cabinet brought into being part of the prophecy made by Lord Trenchard in the White Paper which was published soon after the War 1914-18, in which he said that probably the Navy and the Army would have their Air Arms or Services for their own uses, leaving the great mass of the Air Force free for its own operations. Letters appeared in the *Daily Telegraph* from Admiral Sir Richard Phillimore, who was Admiral Commanding Aircraft in 1918-19, from Admiral of the Fleet Sir Roger Keyes, from Admiral Sir Herbert Richmond, and from Admiral Sir Sidney Fremantle, accepting grudgingly what the Navy had got and arguing that it ought to have had more.

CHAPTER THIRTY-ONE

The Imperial Airways Case

Mr. Robert Perkins, M.P., Attacks I.A.W. and Mr. George Woods Humphery, the Pioneer of "All-Up" Mail—The Cadman Committee (November 1937)—The New Air Council, 1938—Sir Cyril Newall as C.A.S.—New Offices in the Air Ministry—Record Air Estimates, £111,500,000, 1938-39—Dividing Commands—The Growth of the Air Force in 1937—The Cadman Buying American—Labour's Concern About Slowness of Expansion—Lord Swinton Retires

ANOTHER step in the career of Imperial Airways Ltd. towards socialization was a discussion in the House of Commons on October 8, 1937, when Mr. R. D. Perkins, M.P. for the Stroud division of Gloucestershire, made an attack on the general management of Imperial Airways Ltd. He attacked the high rate of dividend paid by the company, and he attacked particularly the way in which the management had dealt with certain pilots.

As a result of his attack a Committee was appointed by the Air Minister on November 17 to enquire into the affairs of the company. This was followed by the retirement of Mr. George Woods Humphery, the Managing Director, who was, in effect, the creator of our Air Communications with the rest of the British Empire. Mr. Woods Humphery (Major R.A.F.) had come into Imperial Airways Ltd., as noted earlier in this book, with Daimler Airways. Although overshadowed by the immense personality of Sir Eric Geddes, he had devoted himself whole-heartedly to building up Imperial air routes. He had been responsible for ordering the big flying-boats which turned out to be so successful. And he was chiefly responsible for bringing about an agreement with the Post Office by which all first-class mail to the Dominions overseas was carried by air.

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The argument turned more and more round the dismissal of certain pilots, and, for reasons best known to themselves, Imperial Airways Ltd. never published any explanation of why those pilots were dismissed, but left the world to assume that they had been victimized. After leaving Imperial Airways Mr. Woods Humphery went to America, where at the time of writing he is, among other activities, representative of and adviser to Imperial Airways Ltd. on that side of the Atlantic.

The Committee was known as the Cadman Committee and its terms of reference were to investigate the charges of inefficiency made by Mr. Robert Perkins against the Air Ministry, and the conduct of British Civil Aviation in general in the House of Commons on November 17.

Lord Cadman, P.C., C.M.G., was Chairman. The other Members were Sir Warren Fisher, G.C.B., G.C.V.O., Permanent Secretary to the Treasury; Sir William Brown, K.C.M.G., C.B., C.B.E., Permanent Secretary to the Board of Trade; and Mr. W. W. Birkett, O.B.E., M.C., an Assistant Director at the Air Ministry, in the Department of Civil Aviation. Lord Cadman was Chairman of the Anglo-Iranian Oil Company and of the 'Iraq Petroleum Company. Thus another crisis in Aviation was met.

By the beginning of 1938 British Air Power had been definitely re-established. For in spite of rumours, and unsupported assertions in the House of Commons to the effect that the Germans had anything up to 10,000 first-line aeroplanes—although still nobody had defined the first-line aeroplane—the output of British aeroplanes, thanks to cordial co-operation between the Air Ministry and the British Aircraft Industry, had grown to such an extent that in the judgment of those who were best entitled to judge, our rate of output was at least as big as that of Germany, and we must have had just about as many aeroplanes in store. Also we certainly had as many pilots. Moreover the quality of our aeroplanes was definitely as high as anything turned out by any nation, and

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on sheer workmanship and excellence of material our aeroplanes were the finest in the world.

During 1937 the constitution of the Air Council had changed entirely. Air Chief Marshal Sir Cyril Newall had succeeded as Chief of the Air Staff Marshal of the R.A.F. Sir Edward Ellington, who had become Inspector-General of the R.A.F. Air Marshal W.-G. S. Mitchell became Air Member for Personnel in succession to Air Marshal Sir Frederick Bowhill, who became Air-Officer Commanding-in-Chief Coastal Command, and Air Vice-Marshal W. L. Welsh became Air Member for Supply and Organization in succession to Sir Cyril Newall. Air Marshal Mitchell was made a K.C.B. in the New Year's Honours of 1938.

An impression of the growth of the R.A.F. during the expansion period may be got from the creation of a new office, that of Assistant Chief of the Air Staff. Air Vice-Marshal W. Sholto Douglas, M.C., D.F.C., was the first officer to hold this post, with effect from February 17, 1938. He had previously been Director of Staff Duties. A few days later, on March 7, two new Deputy-Directorates were formed at the Air Ministry. Group Captain D. F. Stevenson, D.S.O., O.B.E., M.C., became Deputy-Director of Operations (Home), and Wing-Commander W. A. Coryton, M.V.O., D.F.C., was appointed Deputy-Director of Operations (Overseas).

The Memorandum which accompanied the Air Estimates for 1938-39 explained that the net total of the Estimates was £73,500,000. Actually the gross total, including Appropriations in Aid and so forth, came to £111,500,000, compared with £88,588,600 for the previous year. The expenditure on Technical and Warlike Stores alone was £66,734,000 compared with £48,132,000 for the previous year. This gives an idea of the rate of increase in the output of aircraft and all the materials therefor.

The Memorandum explains that the responsibilities of the former Air Officer Commanding-in-Chief Air Defence of Great Britain would be divided between an A.O.C.-in-C. Air

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Striking Force, and an A.O.C.-in-C. Fighter and Army Co-operation Units. Also a separate Maintenance Command for stores and repairs was to be formed during 1938. A note in the Memorandum estimated that employees in the Aircraft Industry had increased from 30,000 in 1935 to about 90,000 by the beginning of 1938. Between April 1935 and March 1938 approximately 4,500 pilots and 40,000 airmen and boys had entered the Service and during the past two years 430 candidate pilots from the Dominions had joined the R.A.F.

The Cadman Committee issued its report on March 8, 1938. The personnel of the Committee had been altered and those who signed the report were Lord Cadman, Mr. J. W. Bowen, Mr. T. Harrison Hughes, and Sir Frederick J. Marquis. The last named was the head of the Lewis department store in Liverpool. Its general recommendations on Civil Aviation were excellent. But in its criticisms of Imperial Airways Ltd. it evidently had not had before it the evidence which it should have had. That again seems to have been because the chiefs of Imperial Airways did not care to produce all the evidence which was in their possession.

The chief recommendation of the Committee on this score was that the Chairman of the company should be in a position to give his whole time to the direction of the business and that he should personally control the management of the company, and should be aided by the service of one or more other whole-time Directors.—That seemed fair enough, because up till then all the detail work had been done by Mr. Woods Humphery and the Chairmanship had been a part-time job.

The Air Ministry started a new, and in certain quarters a remarkably unpopular, policy in April 1938 when it arranged to buy aeroplanes in the United States. Earl Winterton, Chancellor of the Duchy of Lancaster, and Deputy-Under-Secretary of State for Air, admitted on April 13 in the House that: "Definite exploratory action was being taken in regard to the possibility of the supply of aircraft for the Royal Air Force both from the United States and from Canada."

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Naturally the Aircraft Industry objected, and protested that if they were given a free hand without interference from the technical people in the Air Ministry they could themselves increase the output of aeroplanes in this country to meet any possible requirements. The Government announced that a party of experts "were already visiting the United States and Canada where they would investigate whether types of aircraft which might be suitable for R.A.F. purposes were available for early delivery, and that they would also examine the capacity and potentialities for the production of aircraft in Canada."

On May 4 a London newspaper, the *Daily Herald*, published a manifesto issued by the Parliamentary Labour Party which contained serious attacks on the Air Ministry. It said: "Much information of a disturbing character has been collected and in accordance with the intimation given by the Leader of the Opposition, an early opportunity for Debate will be taken."

A writer in that paper said that he could now reveal that Mr. Attlee told Mr. Chamberlain nine months earlier of the Labour Leader's concern at the progress of the Air Programme. The Labour Party he said had been inundated with disquieting information not only from the Air Industry but from abroad. The Debate he said would produce their criticism of the Air Minister, Lord Swinton, and of the fact that the holder of so vital an office was not a Member of the House of Commons.

The *News Chronicle* said: "Mr. Neville Chamberlain has defended Lord Swinton, once, twice, and thrice, but he will find it exceedingly difficult to protect him against the all-Party attack which is now developing."

The *Daily Express* on May 5 said: "The resignation or dismissal of Lord Swinton, Air Minister, will be demanded by the Socialists when the Government Air Re-armament Programme is debated in the House of Commons next Thursday."

The attack was duly delivered in the House of Lords and

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in the House of Commons on May 12. The Air Ministry as a whole came out of the attack rather well. Lord Swinton handled the attack in the Lords easily, and he had the gallant support of his predecessor Lord Londonderry, in spite of the fact that Lord Londonderry had been sacrificed by Mr. Baldwin to make room for Lord Swinton. In the Commons Lord Winterton had a more difficult passage because he had not been long enough in his job to know off-hand the answers to all the points on which he could have crushed or flayed his critics.

CHAPTER THIRTY-TWO

The Kingsley Wood Era

Sir Kingsley Wood Comes from the Post Office, May 1938—Captain Harold Balfour, M.C., Under-Secretary of State for Air—Lord Swinton's Farewell—Sir Edward Campbell, Parliamentary Private Secretary—Lord Weir Resigns from the Air Ministry—Lord Nuffield is Persuaded to Return to the Aircraft Trade—Sir Kingsley Introduces Yet Another Air Navigation Bill—Intended Expansion of British Air Lines to the Continent—The Lords Discuss a Ministry for Supply—Lord Trenchard on the personnel of the Aircraft Trade and Mass Production—The Air Ministry "Buys American"—Industrial Advisers to the Air Ministry—Sir John Reith Appointed to Imperial Airways, June 1938—Mr. Woods Humphery's Resignation Announced—Reorganization at the Air Ministry—Air Marshal Sir Wilfred Freeman Created Air Member for Development and Production—Mr. J. H. Lemon Vice-President L. M. & S. Rly., Director-General of Production—Air Vice-Marshal Tedder, Director-General of Research and Development

So Lord Swinton left, and Sir Kingsley Wood was appointed to be Secretary of State for Air. Sir Kingsley had been a success in all his Government posts. As Minister for Health he drew little criticism. As Postmaster-General he was sympathetic to Civil Aviation and in his period the All-Up Air Mail scheme, organized by Mr. George Woods Humphery of Imperial Airways, was put into practice. Thereafter all "first-class" mail matter to the British Empire Eastward, in Asia, Africa, and Australasia, went by air without extra charge. The result was so big a carriage of mails that in 1939 Imperial Airways had to refuse to carry passengers for a time.

Captain Harold Balfour, M.C., who had for years taken an active part in Air Debates, was appointed Under-Secretary for Air.

Lord Swinton in a letter to the Prime Minister said: "I am

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content to leave the work I have tried to do at the Air Ministry to be judged at the right time in the light of fuller knowledge. My resignation at this time will cause no interruption or delay in the new programme."

All who served with him at the Air Ministry agree that Lord Swinton was an indefatigable worker. Some of them found that dealing with him was rather difficult. And others criticized his fondness for taking too much interest in detail work himself. But everybody gave him credit for meaning well and doing his best.

Captain Balfour who had hitherto been financially interested in a number of air undertakings naturally resigned his position on all of them. Through Whitehall Securities Ltd. (Lord Cowdray's business, of which the Hon. Clive Pearson was the Chief) he was concerned with Spartan Aircraft Ltd., Saunders-Roe Ltd., Spartan Airlines Ltd., and so ultimately with British Airways Ltd. in the general hook-up of air-line interests.

Sir Edward T. Campbell, M.P., was appointed Parliamentary Private Secretary to the Secretary of State. He had been Conservative Member for Bromley and Parliamentary Private Secretary to Sir Kingsley Wood since 1931.

Lord Weir, who had been an Honorary Member of the Air Council for some time and whose work had been much appreciated, resigned from the Air Council on May 17, following on the resignation of Lord Swinton.

One of Sir Kingsley Wood's first acts after his appointment was to interview representatives of the Shadow Industry. He also saw Lord Nuffield and persuaded him to start building a Shadow Factory at Birmingham—a remarkable fact seeing that Lord Nuffield three years before had spent about a quarter of a million pounds on making aero-motors, and had shut down his factory because the Air Ministry refused to give him any support.

In the House of Commons Sir Kingsley Wood's first task was to introduce the Air Navigation (Financial Provision) Bill on May 18. This dealt with various Air Ministry plans to

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expand British air lines over the Continent, and with other phases of Civil Aviation. The plans then disclosed would have done much to increase the reputation of British aircraft all over the world but for the unfortunate developments of the next year which led to war.

The House of Lords discussed the need for a Minister of Supply on May 24 on a motion by Lord Mottistone, better known as General John Seely, who at one time had been Under-Secretary for Air.

In the course of the Debate Lord Trenchard, in his usual close logical reasoning, pointed out that in the last War after three and a half years of war our aeroplane output was at the rate of 32,000 odd per annum. To-day we had 6,000,000 more workable population to make aeroplanes. We had no Army in France and no killed and wounded. He had been told that more men were now needed to build an aeroplane, but when we were turning over to metal aeroplanes we were told that they would be made much more quickly than the old wooden ones.

Lord Trenchard said that in October 1918 there were 347,000 people employed on aircraft work of whom 126,000 were women and boys, and the dilution amounted to 46 per cent. At present he understood that there were about 100,000 or less employed in the Aircraft Industry. On the subject of "mass-production" which had been much discussed at the time, Lord Trenchard was equally logical. He said that if we considered the fantastic number of 30,000 or 40,000 or 50,000 aircraft they must be divided up into at least ten different types and 5,000 aeroplanes of each type was not a mass-production job.

An official notice by the Government on June 10 announced that the Air Ministry had bought 200 of a militarized version of the twin-motor Lockheed 14, and 200 of the North American BT-9B two-seat trainer. Prompt delivery was promised, and in fact deliveries are not far behind the specified date.

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Sir Kingsley Wood showed his progressive ideas again on June 4 when he invited a number of well-known industrialists to join a panel of Industrial Advisers to the Air Ministry. The following accepted his invitation: Sir Amos Ayre, Chairman of the Shipbuilding Conference; Mr. S. R. Beale, Chairman of Guest, Keen & Nettlefolds Ltd. (Mr. Chamberlain's family firm); Mr. J. W. Bowen, formerly secretary of the Union of Post Office Workers; Sir Charles Bruce Gardner, Chairman of the Society of British Aircraft Constructors; Lord Cadman, Chairman of the Anglo-Iranian Oil Company; Lieut.-Colonel J. H. M. Greenley, Chairman of Babcocks & Wilcox Ltd., the famous boiler-makers; and Sir Malcolm McAlpine, Chairman of Sir Robert McAlpine and Sons Ltd., the great builders and contractors.

Sir Kingsley Wood informed the House of Commons on June 14 that the Board of Imperial Airways had, with the full concurrence of His Majesty's Government, invited Sir John Reith, formerly General Manager of the British Broadcasting Corporation, to become whole-time Chairman of the Company, and he had accepted the invitation. The Board of the Company had nominated Sir James Price, Deputy-Secretary of the Ministry of Labour, to be a Government Director. The Managing Director, Mr. Woods Humphery, had resigned, and the Board had placed on record their high appreciation of his services. Also he had offered to make available his knowledge and experience to the new Chairman, and it had been readily accepted. Sir John Reith resigned from the B.B.C.

A sudden reshuffling of the Air Ministry took place as the result of the terrific rush of re-armament. Sir Kingsley Wood announced in the House on June 27 that Air Marshal Sir Wilfred Freeman, at that time Air Member for Research and Development, would in future be responsible for Production as well, and would be designated Air Member for Development and Production (A.M.D.P.). Further, Sir Kingsley informed the House that at the request of the Government the Board of Directors of the London Midland and Scottish Railway had

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placed at the disposal of the Air Ministry the services of Mr. J. H. Lemon, Vice-President of that railway, who had become Director-General of Production. The post of Director-General of Research and Development would be filled by Air Vice-Marshal A. W. Tedder. All these appointments met with approval when they were made and have been thoroughly justified since then.

CHAPTER THIRTY-THREE

The Pace Quickens

Another Supplementary Estimate—Formation of the Civil Air Guard (the C.A.G.)—An Air Wing of the Public Schools O.T.C.—The Invasion of Berkeley Square—The Air Ministry's Domiciliary Ramifications—Aeromobile Sir Kingsley—The Air Ministry Mission to Canada—Possibilities of Supplies from a Canadian Combine—Mr. Chamberlain Flies to Germany—The R.A.F. Takes the World's Long-Distance Record—The Fusion of Imperial Airways and British Airways into British Overseas Airways (the Boa)—The Hon. Leslie Runciman Joint Chairman with Sir John Reith, November 1938—The Formation of the Woman's Auxiliary Air Force

YET again a Supplementary Estimate became necessary. An additional sum of £22,901,000 was demanded by the Air Ministry on July 13.

Another of Sir Kingsley Wood's early activities was the announcement to the Press that the Air Ministry had approved on July 23 the formation of the Civil Air Guard. This scheme, which came under the Department of Civil Aviation, allowed all and sundry who cared to join the Civil Air Guard to have as much flying as they could buy at approximately two shillings and sixpence an hour. Flying light type aeroplanes in slack periods of the week, members of the C.A.G. could get their A licences as pilots for a little more than £2. And even on standard types at week-ends £9 would have sufficed.

In this way thousands of air enthusiasts of all sorts of ages, including women and the maimed, the halt and the blind, joined the C.A.G., but from among them a number of good pilots soon developed, and after the declaration of war many of them were absorbed into the R.A.F.

Another new thing about this time was the formation of an Air Wing of the Public Schools Officers' Training Corps,

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then in camp at Odiham Aerodrome. The boys, who were formed into four squadrons, were inspected on August 2 by Marshal of the R.A.F. Lord Trenchard.

The vast expansion of the Air Ministry itself during 1938 caused the Government to take possession of Berkeley Square House, a new block of buildings on the East side of Berkeley Square and Bruton Street. It was calculated to house about 1,700 officials, mostly from the Directorate of Equipment.

Berkeley Square was only a small part of the Air Ministry. Mr. E. C. Shepherd, then of *The Times* but later Editor of *The Aeroplane* newspaper, wrote of the Air Ministry's domiciliary ramifications, after the invasion of Berkeley Square: "That represents only a part of the existing dispersion. Other pieces of Staff are to be found in the Kingsway neighbourhood in Ariel House, Audrey House, Bush House, Clements Inn, Imperial House, Melbourne House, Princes House, Savoy Hill House, Victory House, and York House. There is another branch in the City at Ibex House and the Meteorological Office has quarters in South Kensington."—That was all in addition to Adastral House at the corner of Kingsway, which originally had been regarded as too big for the Air Ministry.

Throughout 1938, and up to the declaration of war, Sir Kingsley Wood displayed the most astonishing mobility. In spite of the cares of his office he seemed to have time to go everywhere and see everything. And wherever he went he flew, regardless of weather, accompanied by his official shadow, Sir Edward Campbell. By the end of 1938 he must have visited every aircraft factory in the British Isles. He even flew to Belfast and visited the Short and Harland factory and inspected the R.A.F. Units there. In this way he won the respect and liking of the Aircraft Industry and the workpeople in it, and of the R.A.F. itself.

Above all, Sir Kingsley Wood has won the regard of the personnel of the Air Ministry by not pretending to be an expert of any kind. People in the Ministry say that he accepts from his Departmental Chiefs the accuracy of what they tell

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him and then goes and fights for what they want with the Treasury or with the Cabinet. Moreover, he shows an intelligent understanding of his subject, and does not, as so many politicians do, pretend to knowledge which he has not. The result is that he gets things done with willingness and enthusiasm.

The Mission which the Air Ministry had sent to Canada to investigate the possibilities of getting aeroplanes built in that country was joined in August by Marshal of the R.A.F. Sir Edward Ellington, Inspector-General of the R.A.F., who had been to Australia to advise the Australian Government on the Royal Australian Air Force, and returned by way of Canada. The other members of the Mission were Mr. Handley Page, Mr. Arthur Street (now Sir Arthur, and Permanent Secretary of the Air Ministry), and Sir Hardman Lever.

As a result of the British Mission to Canada a Canadian aircraft combine was formed, with the backing of Canadian industrialists, somewhat on the lines of our Shadow Factories. The Directors of the new company were Paul F. Sise, President of the Northern Electric Co.; Victor M. Drury, President of the Canadian Car and Foundry Co.; R. J. Magor, President of the National Steam Car Corporation; Edward Labelle, President of Canadian Vickers; Hubert Passmore, President of Fairchild Aircraft Ltd.; George Cotrelle, President of the Canadian Bank of Commerce; W. H. McIntyre, President of the Ottawa Car Manufacturing Co.; W. J. Sanderson, President of Fleet Aircraft Ltd.; and L. J. Belnap, President of the Consolidated Paper Co.

Let us put on record here the fact that between September 18 and September 24 the Prime Minister, Mr. Neville Chamberlain, twice flew to Germany and back to discuss a possible way to peace with Herr Hitler. This has nothing to do directly with the Air Ministry, but it indicated the important part which Air Transport had come to play in world politics, seeing that Mr. Chamberlain had never flown before.

One good act of the Air Ministry towards the end of 1938

was to back the construction by Vickers Ltd. at Weybridge of special long-range Vickers Wellesley monoplanes with 1,010 h.p.-Bristol Pegasus XXII motors (one each). Three of these left the R.A.F. Station at Ismailia on the Suez Canal at 03.55 hrs. (Greenwich Mean Time) on November 5. One of them landed at Koepang on Timor Island in the Netherlands, East Indies, early on November 7. Numbers 1 and 3 landed at Port Darwin at 04.00 hrs. (G.M.T.) on November 7. The distance was calculated to be 7,162 miles, which beat the existing point-to-point Long Distance Record for aeroplanes, but not the Record for non-stop flying round a Closed Circuit.

A momentous decision for British Civil Aviation was announced by Sir Kingsley Wood in Parliament on November 11, when he stated that the Government had been considering its future relations with Imperial Airways and British Airways. The Government therefore proposed to recommend in Parliament legislation setting up a Public Corporation which would acquire the existing undertakings of Imperial Airways and British Airways. The Government hoped to fix with the Directors of the two companies a fair and reasonable price for each undertaking which could be submitted to the shareholders for approval and, if agreed, could be inserted in the Bill.

Thus another step was taken towards making our air transport a purely national-socialistic affair. The name proposed, and ultimately adopted, for the concern was The British Overseas Airways Corporation, or the B.O.A. Corp. for short. It naturally became known as the Boa Constrictor, on the strength of the obvious intention that it should absorb all the small air transport companies in the Empire.

On November 29 an announcement appeared that Squadron Leader the Hon. Walter Leslie Runciman, son and heir of Lord Runciman, Chairman of the great shipping firm, had been appointed joint Chairman with Sir John Reith of Imperial Airways to help him in the many new duties which would result from the merger of Imperial and British Airways as a

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Public Corporation. Mr. Runciman himself was a well-known and much-practised owner-pilot and had for some years commanded No. 607 (County of Durham Fighter) Auxiliary Air Squadron at Usworth. He had also proved himself an able business man as a director of numerous successful companies. In all his activities he had won the respect and the personal affection of those who worked with him. And in his earliest dealings with the affairs of Imperial Airways and British Airways he showed knowledge and tact which gave high promise for his future management of the Boa.

Almost the last act of the Air Ministry in 1938 was to create the Women's Auxiliary Air Force. This was practically a revival of the Women's Royal Air Force which had done so much towards the end of the War 1914-18 to help the R.A.F. by acting as drivers, clerks, kitchen hands, waitresses, and some of them as air mechanics.

CHAPTER THIRTY-FOUR

The Year of Reckoning

The President of the Federation of British Industries, on Hopeful Prospects for 1939—The Air Ministry Goes on Preparing—Expansion in Scotland—The Dispute About the Empire Air Mail Base (Southampton versus Portsmouth)—Air Estimates Exceed £200,000,000—Doubled Output—An Embarrassment of Riches—Barrooms for the Provinces—The Government Regrets its Expenditure—The Chancellor of the Exchequer on Aircraft Profiteering (February 1939)—Expenditure on the Royal Aircraft Establishment, Farnborough—Sir Kingsley Wood on Air Ministry Methods and Progress—The Alleged Aircraft Ring—Rewards to Pioneers—Keeping Designers Alive—Cutting Out War-Profiteers—Approved Firms—Fantastic Estimates for 1939-40—The Maintenance Command—The Reserve Command—The Strength of the R.A.F.—The Numbers of Flying Clubs—Civil Air Guard Commissioners

THE year 1939 opened on a note of hopefulness. Mr. Peter Bennett, President of the Federation of British Industries, which includes the most important people in the Aircraft Trade, writing on "World Trade" in *Lloyd's List Annual Review* for 1938, said that the agreement signed between Mr. Chamberlain and Herr Hitler at Munich in September 1938 marked the turning-point in Europe, and that Mr. Chamberlain's new policy of consultation continuously maintained was likely to bring this country into closer direct contact with a country whose methods of trading are radically opposed to our own. Instead of continuing to compete in an atmosphere of suspicion and aversion, we should have to face up to this new system, examine it, find out how it worked, and perhaps even to co-operate with it.

A leading article in *The Times* said: "The plain fact is that the German and British people have no wish to fight each

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other and no cause to fight if both are determined upon the settlement of differences by co-operation."

At the same time, contrary to the usual custom in this country, the Air Ministry continued its policy of preparedness. Mr. E. J. H. Lemon, the new Director-General of Production at the Air Ministry, visited Edinburgh and Glasgow and interviewed the City Fathers of those cities and examined the possibilities of opening great new aircraft factories in Scotland. Some of them were well at work before war was declared.

Round about this period there was much dispute about the choice of a suitable air base for our Empire air mail carried in the big Short Empire boats. Hitherto they had been flown from Southampton Water and operated from a temporary air base at Hythe alongside Mr. Hubert Scott-Paine's Power Boat Works. A strong faction was in favour of damming the outlet of Langstone Harbour, North-East of Portsmouth, and fitting the dam with locks so that the harbour could be used by big flying-boats at all states of the tide. A similar project was put up for Pagham Harbour, near Chichester.

All the flying-boat people agreed that either site would be better than Southampton Water, encumbered with shipping and small boats, and sometimes liable to be made dangerous by floating logs and debris generally, so that flying-boats could never be landed there in safety in the dark or thick fog. When war was declared the flying-boats were still operated from Hythe and the Air Ministry had not given a final decision on the subject.

On February 15 a "Statement Relating to Finance" was presented by the Prime Minister to Parliament, by Command of His Majesty. It dealt with the expenditure of the three Defence Departments taken together. These are particularly interesting at this time. For 1937 the sum for the three was approximately £262,000,000. For 1938 the total was about £388,000,000, and the Estimates for the three Departments together for the year which began on April 1, 1939, was about £523,000,000.

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The Air Estimates for 1939-40 exceeded £200,000,000. This was the first time in history that Air Power had been estimated to cost more than two hundred millions. The explanation of the large amount was the number of modern aeroplanes which were now coming into the squadrons as the result of increased manufacturing capacity and the improvement in arrangements for production.

The statement said that in the current year, that is 1938-39, the monthly rate of delivery of aeroplanes to the R.A.F. had been more than doubled and was showing a still further substantial increase. The number of recruits required for the R.A.F. during the financial year which ended on March 31, 1939, involved the entry during the year of some 31,000 officers, men, and boys, including 1,500 pilots. Indications in February were that the entry might reach 35,000, and the statement was made that something of the order of 20,000 more would be required for the regular force, apart from Volunteer Reserves, during 1939.

Further, the statement said that there were then twelve Service Flying Training Schools, and three more were shortly to be opened. Flying training, both for the R.A.F. and the R.A.F. Volunteer Reserve, was then being done at more than thirty civil flying training schools. More than 2,500 Volunteer Reservists were at that time being trained as pilots. Some 2,000 additional personnel would be added to the Fleet Air Arm by March 1939, and during the year 1939 an increase of 4,000 was contemplated.

I may add here that after the declaration of war in September 1939 the rate of increase in all these figures grew still faster. In fact, what with Regular Reservists called up and the new Volunteer Reserves joining up, the last three months of the year found the Air Ministry very much embarrassed with riches. They had more aeroplanes than they could use and more men than they could house and administer. The result was that numbers of Reservists were told to go home on indefinite leave.

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The White Paper of February 15 further said that by the end of March 1939 the number of first-line aeroplanes—still an undefined entity—on the strength of the Metropolitan Air Force would have been raised to 1,750. The programme for 1939 envisaged a Metropolitan first-line strength of approximately 2,370 aeroplanes, and an overseas strength of 500, and the completion of the expansion of the Fleet Air Arm.

Another interesting statement was that the Balloon Barrage scheme, which was started in 1938, had now been extended to the provinces, and comprised forty-seven squadrons. A separate Command had been formed for the administration and training of these units, but for operation they were to remain under the Air Officer Commanding in Chief Fighter Command, who was responsible for air defence as a whole.

Purely as a side-issue I may remark that there was some controversy in *The Times* about the popular name for these implements, which had been so much in the public eye since General Ashmore's "Balloon Aprons" of 1918 became "Balloon Barrages." Several correspondents insisted on calling them "Blimps," disregarding or being ignorant of the fact that the word, invented by the late Horace Short, definitely meant a small airship envelope propelled or tracted by the fuselage of an aeroplane slung below. Not until late in 1938 was the right name found, when a B.B.C. announcer accidentally called one, which had broken loose, a "Barroon."

The White Paper added: "His Majesty's Government deeply deplore the need for the expenditure of these vast sums on armament. They have already indicated that, when other nations are prepared to consider some arrangements for the limitation of armaments, this country will be prepared to play its part. But in the absence of a general reduction of armament it is inevitable that this country should continue to take the steps necessary, in the light of present developments, for its own protection and for the discharge of its responsibilities elsewhere.

"It follows that in these circumstances it is not possible to

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give any precise estimate of the total cost of defence measures over the period April 1937 to March 1942. His Majesty's Government are pressing forward with the programmes outlined in this Paper. They are confident that the people of this country will be ready to bear the heavy burden involved, and will share the determination of His Majesty's Government to ensure the adequacy of our defence preparations."

In this history I have avoided expressing personal opinions, but I think that I shall have the majority of my readers with me if at this point I say that a large proportion of this expenditure would have been unnecessary in the year 1939 if the House of Commons had been wise enough to back the reasonable scheme for the expansion of the R.A.F. without any panic which was laid down by Sir Hugh Trenchard and Sir Samuel Hoare in 1923.

Sir John Simon, Chancellor of the Exchequer, when he moved the second reading of the Defence Loans Bill on February 28 in the House of Commons, defended the British Aircraft Industry and denied that it was making inordinate profits out of the re-armament programme. He said that the Treasury would be deeply concerned to secure in every practicable way that good value was obtained from the vast outlay. There were hundreds and thousands of contracts and no Chancellor of the Exchequer could possibly examine them all, but he had very closely examined the general system and methods, and officials of the Treasury had done so with him.

Mr. Pethick-Lawrence (Labour, Edinburgh) moved an amendment: "That while recognizing the regrettable necessity for an unprecedented defence programme, this House is of the opinion that in the interests of efficiency and public economy the Bill ought to be preceded by more effective measures for the co-ordination of the Services, the organization of supply, and the elimination of excessive private profits."

He said that the Government would not get national unity or volunteering for service so long as the public believed that

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vast profits were being made out of the national need by firms with Government contracts. Under private enterprise this sort of thing was bound to arise. There was no adequate solution of the arms problem except by creating the necessary armament by direct labour under the Government itself. The Government would have to devise some method not for clawing back profits after they had been made but for preventing such enormous profits from being made.

In answer to that, critics of the time pointed out that the Royal Aircraft Establishment at Farnborough, which had long been suspected of extreme Left Wing tendencies, had been for many years costing £400,000 a year or more, and had produced little to show for this expenditure.

Sir Kingsley Wood said that the question of the methods and steps taken by his Department in reference to contracts, particularly for aircraft production, was a difficult problem which carried on the one hand, so far as he was concerned with the Air Ministry, the need for rapid and extensive production of aircraft, because that was what the House and the nation required, and, on the other hand, they had to see to it that reasonable prices were obtained, fair alike to the State and to the contractors.

He said that so far as fixing prices was concerned there was not only in the first place an examination by skilled officers, but they employed a large number of technical officers who estimated and were at the Works themselves at the beginning and through the contract so far as that particular aspect was concerned. There was also an accumulating knowledge to-day of the cost and the performance of a particular firm on a previous contract.

He added that now that we were fully into our stride our costs were definitely lower than for corresponding types, say, in America. He said that statements about a ring (of aircraft manufacturers) had been made, but that there was no ring to-day restrictive of the development of manufacturing capacity where it was suitable and available.

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One of the features of the growing production of the Air Department to-day, he said, had been the number of additional organizations and firms which the Air Ministry had brought in apart from the members of the original Industry itself. What he had tried to avoid was further to encourage an additional number of types of machines, and he did not want to encourage additions so far as designs of new types were concerned which had also the considerable disadvantage of making demands upon draughtsmen, who were scarce at present.

Sir Kingsley said that it would be very harmful from the point of view of aircraft production if there had been widespread profiteering. It would not make for good feeling between employers and workmen in the Industry and would have a bad effect generally when the Government was dealing with national service.

From a defence point of view the country was fortunate in having a strong core of aircraft manufacturing firms upon whom they could call in a national emergency, and who had done so much in the rapid expansion of the Industry by their special knowledge. These firms had rendered great service in the training of labour, and giving advice to newcomers in the Aircraft Industry. Many of them had passed through difficult times in past years. Many of them had had to write down their capital to low levels because of bad times, but it was fortunate that they had in a number of cases been able to rebuild their organizations which were now capable of meeting the country's defence needs on a considerable scale.

I have quoted these remarks at some length because they indicate not only the official view of the Air Ministry, of whose various Departments Sir Kingsley Wood was the mouth-piece, but they give a very interesting view of the whole situation historically.

For years there had been stories of an Aircraft Ring, mostly circulated by people who wanted to get Air Ministry contracts and could not get them. But that something resembling more

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or less remotely a ring did exist cannot be denied. The Air Ministry in the earlier years after the War 1914-18 deliberately did its best to keep alive the aircraft firms which had existed and had done good work during the war, and had struggled to remain in the Aircraft Industry when a great many of what one might call outside firms, who had rushed into the Aircraft Industry during the war and made very handsome profits, dropped aircraft after the Armistice and pouched their profits.

That the pioneer firms which remained in the Industry should be rewarded with orders when the longed-for and long-planned expansion took place was only natural.

Moreover, the Air Ministry knew by experience which firms could be trusted to turn out good stuff and which could not. Consequently the Air Ministry itself formed a kind of ring of concerns which were known as Approved Firms. The ring was not formed by the firms themselves. As one famous manufacturer had said some time before to the Royal Commission on Armaments, so far from there being an Aircraft Ring, he had never been able to get the aircraft manufacturers of this country to combine in defending their own markets.

Furthermore, in the formation of this pseudo-ring by the Air Ministry, there was the highly ethical principle of rewarding those who had, in the Biblical phrase, borne the burden in the heat of the day, and—as the Bible does not say—had been feeling the draught when orders were not forthcoming.

The Air Estimates for 1939-40 which were issued in March were peculiarly confusing. The gross Estimate was £220,626,700, which looks appalling. The net Estimate was shown at £66,561,000 which in these days seems ludicrously small. Then one discovers that there was an Appropriation in Aid taken from the Defence Loan of £142,000,000.

In the White Paper accompanying the Estimates the creation of the Maintenance Command was made public. The new Command was made responsible for the administration of all storage units and depots at home; it was to deal directly on

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maintenance questions with the Operational and Training Commands.

Hitherto maintenance had been rather left to look after itself. Either squadrons did their own repairs and maintenance or sent the aeroplanes or motors which were to be repaired to one of the Depots.

A certain humour was connected with the creation of the Maintenance Command in that the idea had been invented and the scheme had been worked out in detail by a distinguished officer in the Royal Air Force, who had hoped, when the scheme was passed, to be appointed to some quiet occupation such as a Bomber Command where there would be regular routine work. Instead, the Air Council said in effect: "You invented the Maintenance Command. Now you go and command it." Which meant that he had to set going each detail of the whole scheme which he himself had devised.

Another creation of the period was the Reserve Command which had been formed to be responsible for the training of all sections of the Volunteer Reserve, pilots, air crews, and ground personnel. The Command also controlled the Elementary Flying Training Schools to which regular personnel was sent for initial instruction before being sent to the Service F.T.Ss., as they are called.

The White Paper also disclosed that the strength of the R.A.F. had risen to about 96,000 men as compared with 30,000 in 1934. The scheme was that during 1939 the strength was to rise to 118,000.

Naturally no figures are or can be published for the R.A.F. since the declaration of war. But that very high figure of 118,000 as the potential peacetime establishment, shows that those in high places were thinking in the right direction. And we may assume that, if one reckons in all the Reservists of all ranks who were called up when war was declared, the strength of the R.A.F. may even exceed that at the time of the Armistice in 1918.

There is interest in noting that there were at this time

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sixty-eight Flying Clubs in Great Britain, all subsidized in one way or another by the Air Ministry, and all helping with the training of pilots under the Civil Air Guard scheme.

The Air Ministry had appointed Civil Air Guard Commissioners to oversee the working of the C.A.G. scheme. Of these Lord Londonderry was the Chairman. The other members were Mrs. F. G. Miles, Major Alan Goodfellow of Manchester, Mr. Robert Murray of Glasgow, and Air Commodore Chamier, Secretary. Although the C.A.G. pilots were regarded more or less with scorn by the more affluent club members, and by certain of the R.A.F. pilots, many of them turned out to be extremely good, and, on the declaration of war, many of them joined the R.A.F.

CHAPTER THIRTY-FIVE

The Offensive-Defensive

Lord Trenchard in the Debate on Defence, March 1939—Popular Condemnation of Attack—Advocates of Defence Only—Women and Children as Magnets for Bombs—The Truth About Bombing—The Object of an Air Force—The Counter-Offensive—Lord Chatfield on Empire Bases—Sir Arthur Longmore in Australia (April 1939)—The Defence of the Pacific—Sir Arthur Street, Permanent Under-Secretary for Air—Empire Air Day (May 20), a Million Visitors to Air Stations—The Death of Sir Philip Sassoon (June)—The Boa Bill (July)—Sir Kingsley Wood's Escape—The A.O.C.-in-C. Fighter Command on Confidence in Our Defence—Facts and Figures—The Need for Technical Progress—The Danger of Over-Standardization—The Declaration of War

IN the House of Lords on March 15 Viscount Trenchard opened a Debate on Defence. He explained that he was not in any way advocating a policy of aggression. He was against the idea of a preventive war, and his remarks were based solely on the question of an attack on our vital interests by some other Power. He said that the Government, like the Royal Flying Corps in 1914, was being shot at alike by friend and foe, and one of the chief reasons for all this shooting was to make the Government do more and more for the protection of our persons rather than to bring any pressure to bear on them to protect the life of the nation as a whole.

No doubt he would be accused of being a Die-hard, he said, one who only wanted to attack, especially because, ever since the War 1914-18, there had been a constant stream of literature condemning the mere mention of attack. He was puzzled at this stream of writing all advocating defence and nothing else. All critics seemed to think of nothing but defence, and yet, so far as he could see, they disagreed with the Prime Minister's great policy of avoiding war.

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He pointed out that it was continually stated that when a bomber was sent out to bomb, the bombs were always aimed at and always hit women and children. Whatever was bombed in another war, nothing they could say or do would prevent enemy propaganda and our own from asserting that women and children were bombed intentionally, because of course a number of women and children would undoubtedly be hit. If Woolwich Arsenal were to be completely obliterated by a thousand tons of bombs all England would be told that the women and children living in the houses nearby had been hit and not a word would be said about the destruction of the Arsenal.

He believed that 80 per cent of the bombing in Spain and China had been aimed at definite military objectives. There were many towns in Spain whose residential quarters had not been bombed at all. He had read that a hospital for women and children had been destroyed in China. He believed that this was quite true, but he also understood that the power station of the town was situated alongside of it, and was also completely destroyed.

He said that the first object of an army was to knock out the other army. The object of an Air Force was to knock out the other nation's supply of munitions and means of life. Air fighting was incidental, not the object.

He pointed out how during the War 1914-18 local defence was organized for certain places at home and in France and yet they were continually bombed. He hoped that if war were forced upon us our defensive power would be great enough to enable us to counter-attack on ground of our own choosing and not of the enemy's. He asked the Government to consider that if they wanted to give confidence to all nations of the world they must be prepared to launch a vigorous counter-offensive. This country must be able to do something to help our smaller friends and, even if we did not look at it from an idealistic point of view, to defend ourselves by helping them to defend themselves.

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Lord Chatfield, Minister for the Co-ordination of Defence, replying, said that he entirely agreed with the whole spirit of Lord Trenchard's speech. He was not quite sure that he was prepared on behalf of the Government to give the assurance that they intended to build up a military force that would be the terror of all aggressors. Our whole system of Imperial strategy must be founded on having secure bases from which our armed forces, and particularly our Navy, could operate.

The most important by far of these bases was the United Kingdom itself, the very heart of the Empire. To-day the danger they had most in mind was the necessity of providing adequate defence against air warfare. Developments in recent years had undoubtedly reduced the old supremacy of the offensive over the defensive in air warfare.

Plans had been made for the defence of the United Kingdom against air attack and these were kept under constant review by a standing Sub-committee of the Committee of Imperial Defence. This Sub-committee had the Air Officer Commanding-in-Chief the Fighter Command as Chairman, and its membership included the General Officer Commanding Anti-Aircraft Defence, and the Deputy Chairman of the third section of these defences, together with representatives of the Operational Staffs of all three sections, and they were in close co-operation with the Air Raid Precautions Service. There was in fact a combined General Staff dealing with Home Defence against air attack in all its aspects.

An important announcement appeared in *The Times* newspaper on April 19 to the following effect: "Air Marshal Sir Arthur Longmore, a member of the Commission (that already mentioned to Australia) is remaining in New Zealand to represent the Air Ministry at the Pacific Defence Conference between British, Australian, and New Zealand representatives which opens on Friday"—that was April 14. That was the first and only intimation to the British people of the organization of a regular scheme for the defence of the Pacific, against a potential aggressor—which could in fact only be Japan.

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In May 1939 Sir Arthur Street, K.B.E., C.B., C.M.G., C.I.E., M.C., was appointed Permanent Under-Secretary of State for Air in place of Sir Donald Banks, K.C.B., D.S.O., M.C., who on his return from Australia had been made a member of the Import Duties Advisory Committee. Sir Arthur, to whom references have already been made in this book, was for eighteen years in the Ministry of Agriculture, where he had to do with the organization of the first agricultural marketing scheme.

The Committee which went to Australia—to which reference is here made—consisted of Sir Hardman Lever, who had been with the Committee which had previously visited Canada, Air Marshal Sir Arthur Longmore, and Sir Donald Banks. They spent the first half of 1939 in Australia advising the Australian Government on air defence generally and investigating the possibilities of Australia for the production of aeroplanes as well as pilots.

Empire Air Day, May 20, 1939, was a record in every way. About a million people visited seventy-eight aerodromes, including sixty R.A.F. Stations, which were open to the public on that day. Twenty more stations were opened than in 1938. The enormous attendance showed the interest that the British people were taking in what they were already beginning to realize as the primary offensive and defensive arm of the British Empire.

Although he had ceased to be a member of the Air Ministry, I must here record the 'death on June 3 at the early age of fifty-one, of Sir Philip Albert Gustave David Sassoon, Bart., G.B.E., C.M.G., at his residence in Park Lane. During the War 1914-18 he was Private Secretary to Field-Marshal Sir Douglas Haig. After the Armistice he served at the Peace Conference at Versailles. He was appointed Under-Secretary of State for Air in November 1924, and held that office under Sir Samuel Hoare until 1929. He again held office from 1931 to 1935 under Lord Londonderry and from 1935 to 1937 under Lord Swinton.

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He made many long journeys by air to visit R.A.F. Stations overseas. When out of office he was Squadron Leader Auxiliary Air Force in Command of No. 601 County of London Squadron, and he qualified as a pilot in the R.A.F. so that he could properly wear a pilot's wings. His death deprived the country of a man who did much during his short life and seemed to have still greater possibilities with increasing age and wisdom. Many people in the Air Force mourned one who had done much for them and been a good friend.

On July 10 Sir Kingsley Wood moved the second reading of the British Overseas Airways Bill. He pointed out that international competition in air transport was already very strong, that national competition did not go with subsidies, but that internationally it was severe. America had encouraged competition. European nations had adopted and heavily subsidized their chosen instruments.

The proposed Corporation was to secure the fullest development of overseas air transport services consistent with economy. Imperial Airways had been much criticized in the past; the emphasis had undoubtedly been put on cheap flying rather than on aeronautical progress; the new corporation would have more money, and the means to develop a broad and progressive policy. This Bill provided for borrowing up to £10,000,000, some £5,000,000 to begin with. Half would be needed to buy the two companies and half to buy new aircraft and develop the lines.

He gave some interesting figures about the money invested in the two air lines, but that is not a matter concerning the Air Ministry. The Bill in fact only concerns the Ministry in that it marks the good intentions of the Ministry towards developing Civil Aviation on a National or Socialistic basis if war had not interfered with the process.

Here I need only say that on the outbreak of war on September 3 all civil flying was stopped and all the air lines, internal and external, were gathered together into an organization called National Air Communications, commonly known

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as N.A.C., under the control of the Director-General of Civil Aviation Sir Francis Shelmerdine, and under the management of the various Sub-Departments of his Department. Internal air communication became purely a matter of Government transport. Ordinary air line flying to the Continent practically ceased, but air communication between this country and Holland and Belgium and Denmark was resumed under strict limitations after some delay.

The only lines which operated comparatively to schedule were the Imperial lines to South Africa and Australia. Most of their route is over British territory, and the rest is over quite friendly neutral nations.

Sir Kingsley Wood, His Majesty's Secretary of State for Air, had a narrow escape from death, or at any rate from serious injury, on June 28, when on its way to Belfast the Air Ministry's aeroplane in which he was flying had to make a forced landing because of bad weather at Kirby-in-Furness. Sir Edward Campbell, Sir Kingsley's ubiquitous Parliamentary Secretary, damaged his head and broke his wrist. Air Marshal Sir Christopher Courtney, the pilot Wing-Commander Anderson, and the second pilot and the radio-operator were all damaged. Sir Kingsley Wood himself was happily unhurt.

If Sir Kingsley Wood and his staff had been killed in that crash and one member of the crew had survived to tell the tale, somebody might have got up in Parliament and have asked the question which so many people in Aviation have been asking for years: "How much longer shall we have to wait for aeroplanes which will land slowly and will not burn up if slightly damaged in making a slow landing?" At the time the suggestion was made that Sir Kingsley Wood's enthusiasm for flying might have consoled him for leaving this world in such a good cause. But everybody concerned with Aviation was glad that he did not, and happily I have not had to record yet another major change in the varied history of the Air Ministry.

On August 12 Air Chief Marshal Sir Hugh Dowding, Air

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Officer Commanding-in-Chief Fighter Command R.A.F., broadcast from the B.B.C. a short summary of the recent Air Exercises. He said that he would like to leave his listeners with a feeling of quiet confidence in our defence organization, while not neglecting wise precautions to minimize the effects of such attacks as did get through.

He said that 53,000 men, 1,300 aeroplanes, 110 guns, 700 searchlights, 100 barrage balloons, which were engaged in the Exercises did not represent anything like the total resources of the country. Concluding he said: "It only remains for us to see that our technical equipment keeps ahead of that of our potential enemies. What we have been doing is to work towards the 100 per cent which is our goal. I am satisfied with our progress, and I confidently believe that serious air attacks on these islands would be brought to a standstill in a short time."

Elsewhere in his address Sir Hugh said: "The rapidity with which Air Ministry scientists produce one invention on top of another is almost embarrassing at times, because the Air Staff can never standardize any arm of defensive detail but must keep their methods fluid so as to incorporate each new device as it materializes."

That was an admirably foresighted view. The Service mind naturally craves for standardization to avoid complication on active service. At the same time continual progress and a continual incorporation of new ideas is necessary if a Fighting Service is to maintain its lead over an enemy. Those who have read this book will remember what over-standardization did for us at the beginning of the last war. I am glad to be able to close this history with Sir Hugh Dowding's warning against over-standardization in the future, and the need for continued progress.

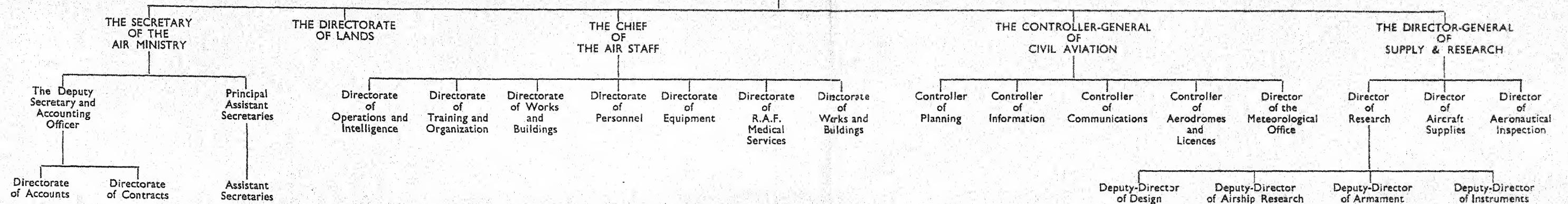
On September 3, 1939, war was declared against Germany, and with that this history must end.

THE ORGANIZATION OF THE AIR MINISTRY, 1921

THE KING

THE SECRETARY OF STATE FOR AIR

THE UNDER-SECRETARY OF STATE FOR AIR

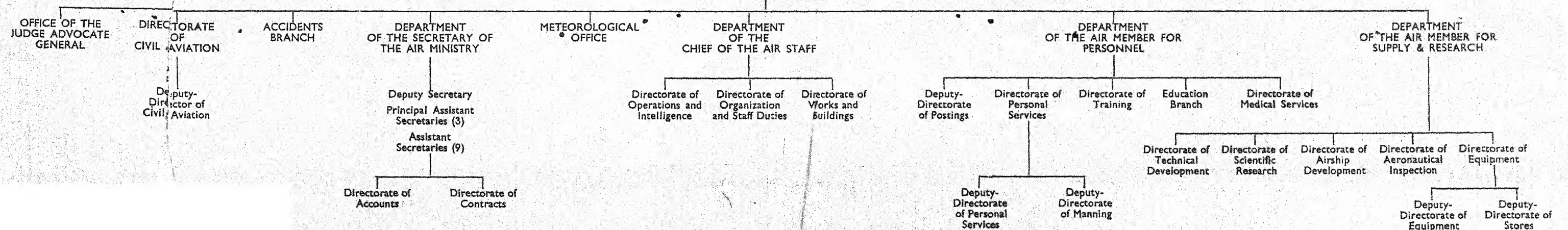


THE ORGANIZATION OF THE AIR MINISTRY, 1930

THE KING

THE SECRETARY OF STATE FOR AIR

THE UNDER-SECRETARY OF STATE FOR AIR

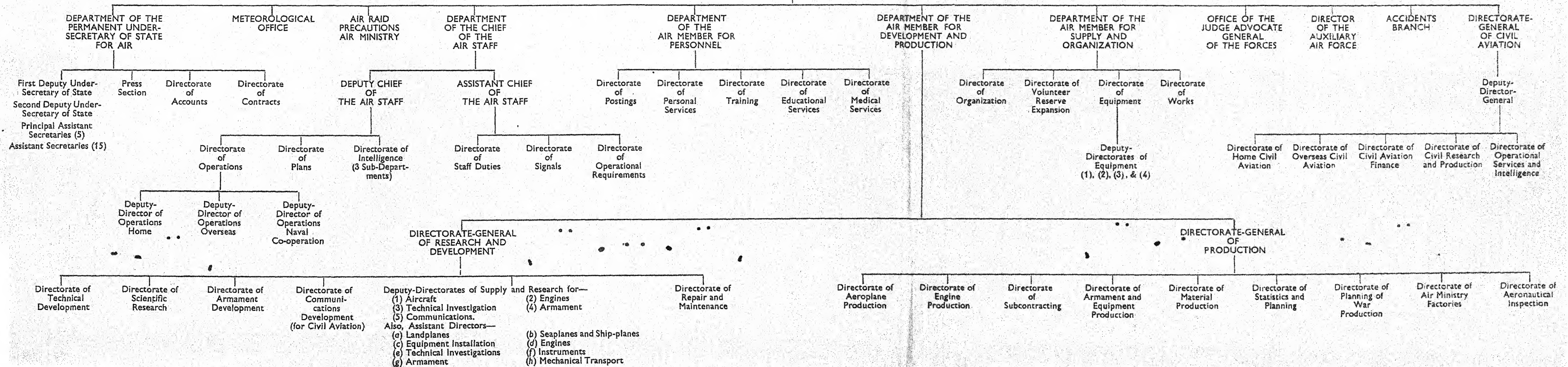


THE ORGANIZATION OF THE AIR MINISTRY, 1939

THE KING

THE SECRETARY OF STATE FOR AIR

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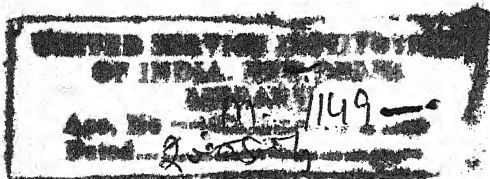
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